JOURNAL OF AMERICAN INSURANCE

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Captured Field Gun at Fortress Monroe, Old Point Comfort, Va.
Photo by U. & U.

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Western Millers Mutual Fire Ins. Co., Kansas City, Mo.	450,000	450,000
Michigan Millers Mutual Fire Ins. Co., Lansing, Mich.	1,263,133	1,403,182
Mill Owners Mutual Fire Ins. Co., Des Moines, Iowa	1,200,000	1,338,982
Millers Mutual Fire Ins. Co., Harrisburg, Pa.	839,587	882,159
Millers Mutual Fire Ins. Co., Fort Worth, Texas	437,774	506,440
Pennsylvania Millers Mutual Fire Ins. Co., Wilkes-Barre, Pa.	1,157,182	1,296,666
Ohio Millers Mutual Ins. Co., Van Wert, Ohio	104,290	123,461
Grain Dealers National Mutual Fire Ins. Co., Indianapolis, Ind.	1,222,118	1,278,526
Millers National Ins. Co., Chicago, Ill.	2,347,576	2,633,891
Totals	$10,026,460	$10,955,351

Increase during 1928 ..... $928,891

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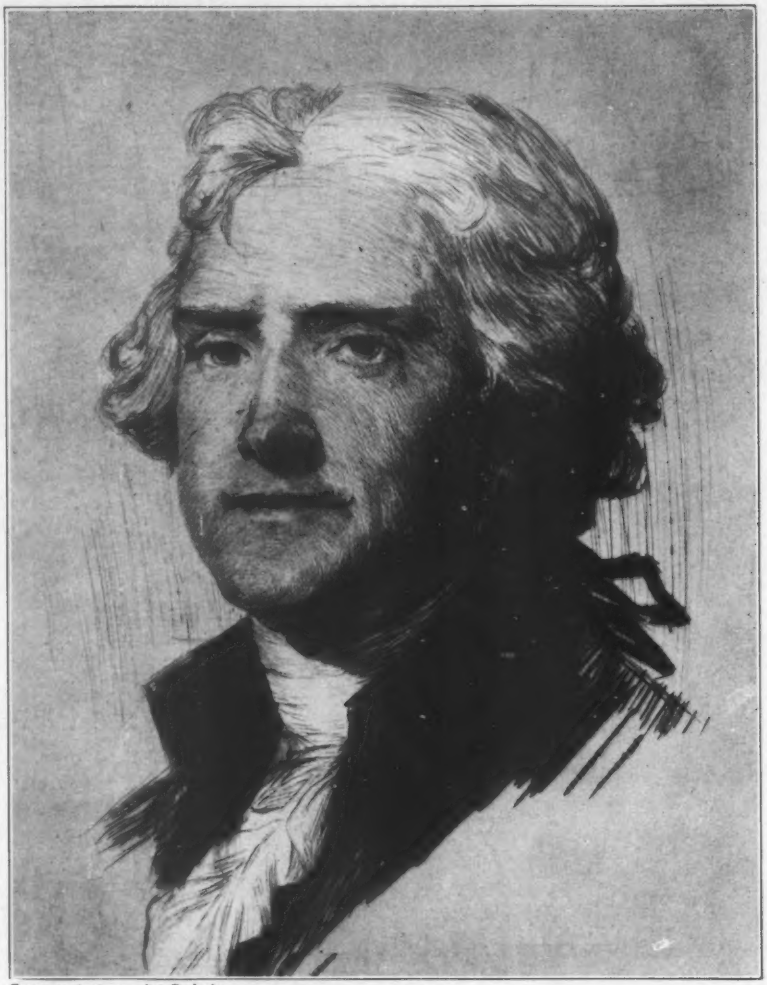
Editorial and Advertising Offices:
180 N. Michigan Ave., Chicago, Ill.

Terms of Subscription: 25 cents per copy; $2.50 per year in the United States; $3.00 per year in Canada; $4.00 in other countries.



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"That All Men"
Are Created
Equal;
That They Are
Endowed by
Their
Creator
with
Certain
Inalienable
Rights;
That
Among These
Are Life,
Liberty
and the
Pursuit of
Happiness."
—Thomas Jefferson.

THOMAS JEFFERSON AND HIS MONTICELLO HOME

The Buildings of Thomas Jefferson's Estate Were Insured in a Mutual Company

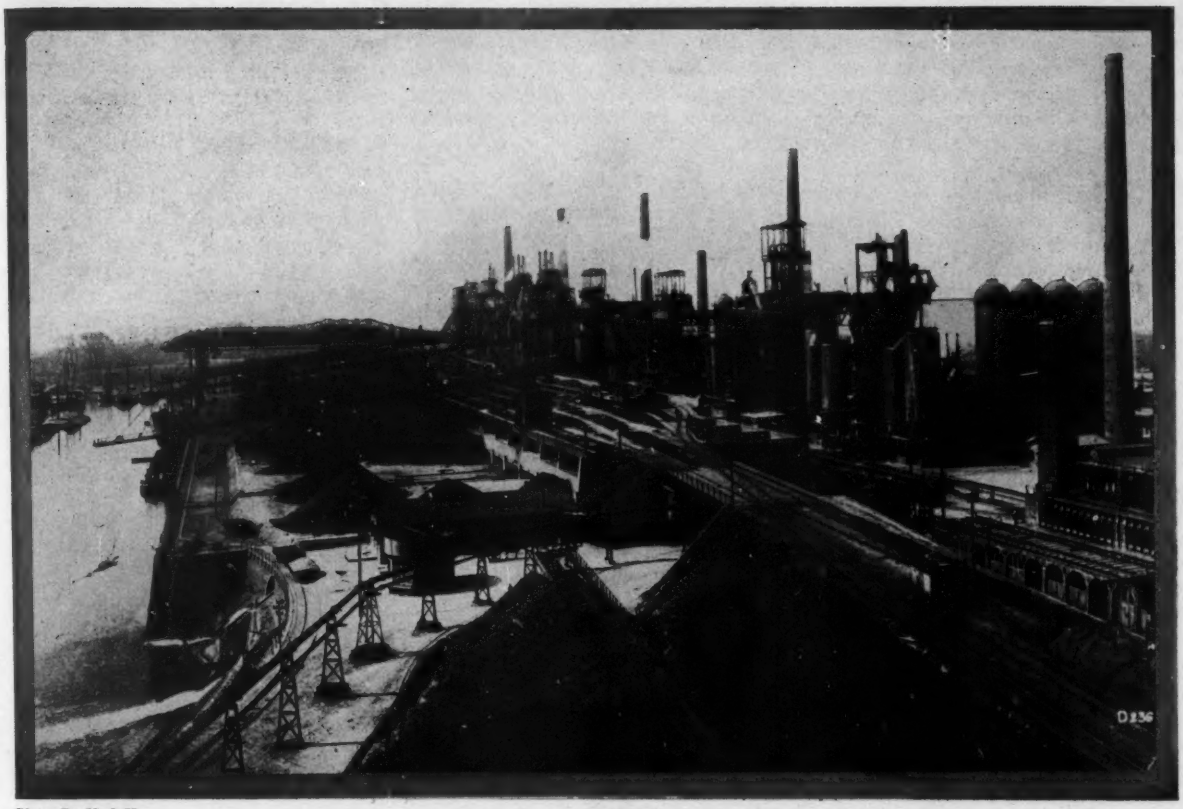


Photo By U. & U.

Coal Docks and Adjacent Buildings at the Krupp Works at Essen in the Ruhr Region of Germany

Coverage of New Value

Details of Experiments by German Underwriters In A Field of Fire Insurance Which Presents Puzzling Features

By PROF. DR. ALFRED MANES
of Berlin, Germany

SHORTLY before the end of 1928 the policy conditions heretofore in use with all the German fire insurance companies have undergone a change which is apt to have an alarming effect far beyond the boundaries of Germany. In the event of a loss, the German fire underwriters have decided that in future, upon application by the insured, the indemnity to be paid shall not be based merely on the value of the property at the time the loss occurs, which is the uniform practice, for instance, in the United States, but shall be figured on the basis of the new value, *i.e.* the amount required to provide a new building of like kind.

Since the close connection existing between the various branches of insurance on the one hand, and the international character of the insurance business on the other, render it not unlikely that this new principle, having now been recognized in one of the most important branches of the German insurance business, will push on for further extension, it seems to me quite appropriate to describe the gradual evolution of what may well be characterized as a fairly revolutionary innovation in the insurance business.

In doing this, I shall not dwell on the fact that this kind of insurance is occasionally met with in England. There, for some time past, a reinstatement and replacement clause has been granted by the members of Lloyds' Underwriters' Exchange, and besides, to meet competition, some English fire insurance companies have included this clause which, however, has not been generally adopted as now seems likely to be the case in Germany.

In Germany also those who demanded the coverage of new value were able to refer to what was already in existence, since it is a peculiar feature of the early insurance evolution in Germany that there are a number of State and Municipal fire insurance organizations, some of them as old as 250 years and more. They all confined their activities to definite closely limited localities, the "Feuerkasse Hamburg," for instance, restricting its business to the city of Hamburg; and this very institute, the oldest of its kind, indemnified the citizens of Hamburg to the extent of the new value when their buildings were destroyed by fire. In this connection, however, it must be taken into account, above all, that every owner of real estate in Hamburg is obliged to insure his buildings with this one municipal fire office. Up to very recently, this anomalous condition has failed to attract much public attention, but this was changed quite suddenly in post-war times, after most of the individual fortunes had been destroyed and especially all real estate owners had been heavily injured, and

when Germany was loaded with enormous and almost unbearable reparation obligations, by which the formation of new fortunes and large capital reserves is rendered practically impossible.

THUS in many instances highly critical situations arise, where in the event of the destruction of a dwelling house or factory building and after the payment of the indemnity due in accordance with the generally prevailing policy conditions, the funds received by the owner of the premises from the insurance company are nevertheless far from sufficient to enable him to rebuild his house or factory building, since the amount of insurance is reduced by deductions in accordance with the age of the building and the owner has not got the difference between the indemnity received from the insurance company and the price to be paid by him for the new building.

In such emergencies the question naturally arose whether that difference could not be provided by insurance. A powerful movement was set on foot among house-owners and large industrialists. The matter was taken up by their organized societies. The press persistently demanded that the insurance companies ought to pay attention to the critical situation of the owners of houses and real estate, and that instead of paying the inadequate actual value at the time of the loss, they should make their indemnities equal to the new value, which was the only one sufficient for the replacement of the buildings. In that connection the above mentioned precedent, established by the German municipal insurance institute, and beyond that the clauses introduced in London, to which we referred, were pointed to. German contractors and industrialists threatened to terminate their contracts with the German fire insurance companies and in future to place their insurances exclusively with English companies paying losses on the basis of the new value.

The German fire underwriters took an unfavorable attitude towards the plan, because at first they were convinced that the German law prohibited such coverage of new value, exactly as the American law does, the argument being that indemnification to the extent of the new value resulted in an enrichment of the insured, which was not the object of insurance. This view was shared by the highest official insurance authority, the "Reichsaufsichtsamt für Privateversicherung" (National Department of Supervision for Private Insurance) at Berlin, exercising the supervision over all the private fire insurance enterprises in the German Empire.

IN opposition to this, isolated voices from among scientific and practical insurance men endeavored to prove that the coverage of new value was not prohibited by the German law and that it did not amount to an illegitimate enrichment, but was merely an indemnification for loss of substance. The propaganda in favor of coverage of the new value steadily increased in acuteness and led to an extremely interesting compromise between the fire underwriters and those demanding coverage of new value, viz., what is known as supplementary coverage of new value, which shall be the first subject of our consideration. It was introduced in the autumn of 1927, its fundamental features being as follows:

(1) The coverage applies to the difference between the new value of the insured property at the time the loss occurs and the insured value according to the general policy conditions (actual value at time of loss).

(2) In the event of a loss a loan bearing no interest is to be granted to the insured by the underwriter, in an amount up to the difference referred to sub (1) and to the extent as the property affected by the loss is replaced or reinstated by the insured, provided such replacement or reinstatement is effected within two years from the date of the loss.

(3) The insured is not entitled to the payment of the loan unless and until the proper application of the money to such replacement or reinstatement is assured.

(4) If, at the time of the loss, the difference referred to sub (1) in respect of the property pertaining to any covered item exceeds the amount insured on such item (underinsurance) then the loan is to be granted only in the proportion which the insured amount bears to that difference.

(5) The loan is to be repaid in ten equal installments, the first installment to be paid two years after the granting of the loan, and the remaining installments to be successively paid each year thereafter.

Premature repayment of the loan is permissible; the conditions applying to such premature repayment being subject to mutual agreement between the underwriter and the insured.

In case of failure to repay any installment promptly on due date, interest shall be paid on it for the time of delay at the rate of 1% above the rate of discount charged by the Reichbank. If the installment is not paid within three months after the underwriter has made demand for payment in writing and stating the consequences of delay, then he shall have the right to give six months' notice of termination of the entire unrefunded balance of the loan. Written demand for payment cannot be effectively made until the installment has become past due.

QUITE similar in its nature as a complicated mixture of an insurance and a loan transaction is the new insurance departure known as property life insurance, introduced at about the same time, the essential features of which have been previously described by me.

Neither one nor the other, however, of these new departures in the insurance business was taken advantage of to any extent worth mentioning. The excited minds were only temporarily appeased, and it was not long before there was a general revival everywhere of the demand for genuine coverage of new value, uncomplicated by any loan which had to be paid back, after all, at some time in the future.

A letter addressed to the German fire underwriters by the National Association of German Industrialists clearly explains the points of view determining the industrialists to insist upon their demand. In that letter it says:

"An interest in the coverage of new value exists in the first place whereever repairs of buildings and total loss of machinery are involved. In their denials of this need the fire insurance companies have pointed out that it was customary with manufacturers to 'write off' adequate deductions to take care of the depreciation of both buildings and machinery, due to wear and tear. But owing to the great financial stress to which a great many concerns are subjected, they are unfortunately unable to follow up such deductions written off on their balance sheets by providing corresponding reserves in funds which can be easily realized on. As a result, even in cases where amounts had to be 'written off' for depreciation, concerns suffering a fire loss are often placed in a difficult position, whenever the indemnities, paid to them by the fire insurance companies with the

customary deductions for depreciation, prove inadequate. That such conditions actually prevail is proved by the existence of what must be characterized as a very great demand on the part of medium-sized and small industrial concerns for long-time loans to replace the liquid working funds lost during the period of money inflation."

As a matter of course, the English competitors made every effort possible to win over the German industrialists who were dissatisfied with German insurance methods, and it looked very much as if their efforts were to be completely successful. One of the largest German electric concerns was on the point of concluding a contract with English fire underwriters, involving the entire fire insurance, and including coverage of new value on its property amounting to many dozens of millions. This German concern, it is true, could point to the fact that conditions in its case are particularly favorable and justify the acceptance of complete coverage of new value; for, unlike other large industrial enterprises which cannot boast of this feature, the concern in question maintains extensive factory conservation plants of its own for the sole purpose of keeping all its factories in perfect working condition, so that, practically, they are subject to no appreciable wear. Experience teaches, however, that in the adjustment of fire and explosion losses the item of such large wear is not sufficiently taken into account, because, as a rule, depreciation is mainly figured on the basis of age instead of according to actual wear which is materially deferred by current repairs. In a case like its own, therefore, the concern was able to prove that there are hardly any well-founded objections on account of enrichment through the coverage of new value of buildings and equipment.

AT THIS juncture the German fire underwriters once more assembled at a meeting which may justly be designated as a historical one in the evolution of the German insurance business. The question to be considered was which of two alternative courses was the more dangerous one for the German insurance business: On the one hand, rejection of the demand for coverage of new value with the possibility of losing many German industrial concerns to English underwriters, and on the other hand, compliance with the demand for coverage of new value and retaining all those German concerns as before. On that basis the majority of the German underwriters decided in favor of introducing the desired coverage of new value.

Next, however, the question arose whether this innovation was likely to be approved by the National Supervising Department, which up to that time had been strictly opposed to the scheme.

In the middle of December, 1928, that Department rendered its sensational decision, having the courage of admitting that its previous view was wrong, revising its opinion on the question, and declaring the coverage of new value as permissible. Evidently this noteworthy attitude of the Department was due to an active appreciation of economic necessities.

The rules regarding coverage of new value, which are now in effect in the whole German territory, read as follows:

Special Conditions for Insurance Covering New Value of Industrial Plants

(1) With buildings the New Value is understood to be the local cost of building; with other property insured at new value it is the amount required to provide new property of like kind.

(2) The indemnity is based on the new value at the time of the loss. *If, however, the depreciation of the property affected by the loss (difference between new value and insured value according to §13 par. 2, G. I. C.) amounts to more than 10% of the new value, indemnity will be granted only in accordance with the Schedule on the reverse side. If the depreciation amounts to more than 50%, then the indemnity is based on the actual value; in so far as property of this kind is enumerated in a specified dec-*

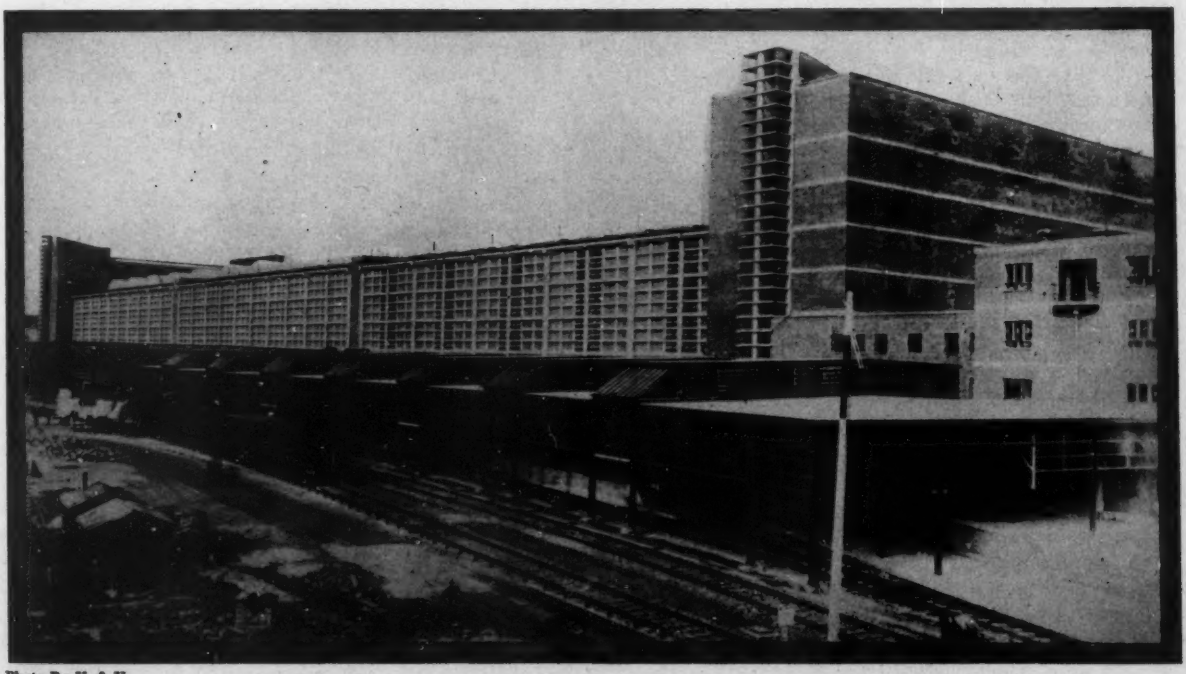


Photo By U. & U.

Largest Covered Market in the World Now Nearing Completion at Frankfort, Germany

laration, the premium is figured only on the amount insured at actual value.

(3) If the new value of the property pertaining to any item, at the time of the loss, exceeds the amount of new value insured thereon (under-insurance), the underwriter shall be liable only in the proportion which the insured amount of new value bears to the new value.

(4) The determination of the depreciation quota is likewise subject to the provisions regarding the procedure with experts. (§14 G. I. C.)

(5) The proportion of indemnity applying to depreciation will be paid only for replacement or reinstatement; the insured is not entitled to the payment of it until the proper application of the money has first been assured.

(6) In all other respects the annexed General Insurance Conditions for fire insurance are applicable.

Special Conditions for Insurance Covering New Value of Dwelling Houses

(1) The New Value is understood to be the local cost of building.

(2) The indemnity is based on the new value at the time of the loss.

(3) If the new value at the time of the loss exceeds the amount of new value insured thereon (under-insurance) the underwriters shall be liable only in the proportion which the insured amount of new value bears to the new value.

(4) To the payment of the indemnity §15 of the General Insurance Conditions is applicable. The insurance may, in the first place, demand payment of that proportion of the amount of indemnity only which falls within the insured value figured according to §13, par. 2 of the General Insurance Conditions (actual value). In the event of under-insurance such payment will be made only in the proportion stated sub (3).

The remaining part of indemnity will be paid only for reinstatement. The insured is not entitled to the payment thereof until the proper application of the money has first been assured.

If, on account of the prohibition by the proper authorities, the reinstatement cannot be carried out on the same site as before, it may be effected on another site within the same local district.

If for other reasons the insured is unwilling to reinstate at all or on the same site as before—which is established by a written declaration on his part or, in the absence of it, by his failure to reinstate within two years after the date of the loss—then he shall forfeit his claim to the payment of the remaining indemnity.

To the determination both of the new value and the actual value §14 of the General Insurance Conditions is applicable.

(5) In all other respects the annexed General Insurance Conditions for Fire Insurance are applicable.

Schedule

With Depreciation of New Value in %	The Indemnity, in % of Total Loss, Amounts to From Actual Value Proportion %	From Depreciation Proportion %	Total %
11	89	+10,89	=99,89
12	88	+11,76	=99,76
13	87	+12,61	=99,61
14	86	+13,44	=99,44
15	85	+14,25	=99,25
16	84	+15,04	=99,04
17	83	+15,81	=98,81
18	82	+16,56	=98,56
19	81	+17,29	=98,29
20	80	+18,—	=98,—
21	79	+18,69	=97,69
22	78	+19,36	=97,36
23	77	+20,01	=97,01
24	76	+20,64	=96,64
25	75	+21,25	=96,25
26	74	+21,84	=95,84
27	73	+22,41	=95,41
28	72	+22,96	=94,96
29	71	+23,49	=94,49
30	70	+24,—	=94,—
31	69	+24,49	=93,49
32	68	+24,96	=92,96
33	67	+25,41	=92,41
34	66	+25,84	=91,84
35	65	+26,25	=91,25
36	64	+26,64	=90,64
37	63	+27,01	=90,01
38	62	+27,36	=89,36
39	61	+27,69	=88,69
40	60	+28,—	=88,—
41	59	+28,29	=87,29
42	58	+28,56	=86,56
43	57	+28,81	=85,81
44	56	+29,04	=85,04
45	55	+29,25	=84,25
46	54	+29,44	=83,44
47	53	+29,61	=82,61
48	52	+29,76	=81,76
49	51	+29,89	=80,89
50	50	+30,—	=80,—

FOR the sake of greater clearness those passages in the Conditions, which have to be regarded as deviations *in substance,* are printed in italics; even at a cursory glance it can be seen that the bulk of the conditions agree in substance, although there are certain differences in the form of wording. Nothing is said in the conditions to indicate what kinds of property are admissible to coverage of new value; according to the resolutions of the Working Community, the following kinds are comprised respectively, by

(1) Insurance covering New Value of Industrial Plants: Buildings and structures; also machinery and mechanical working equipment, including transmissions, apparatus, piping, implements, utensils, and tools, as well as movable factory and stock-room contents and appurtenances except motor vehicles.

(2) Insurance covering New Value of Dwelling Houses: Hard-roofed dwellings and office buildings, as well as public buildings except industrial plants, if such buildings are situated in towns, rural communities with building rules along city lines, or country-house settlements. Also buildings mainly used for dwelling purposes, but containing also stores and small workshops; finally annexes on dwelling house sites.

Theorists and students of insurance science not only in Germany but in all other civilized countries are confronted with a difficult task by this innovation. They must try to properly classify it in their respective systems, which will not be quite easy. The proper way of approaching the new feature is probably by viewing it as an extension to provide indemnity for loss of substance.

Of course it would be a mistake to believe that the problem has been definitely solved by the conditions above referred to. On the contrary, the problem has just been broached, for now demands will unfailingly be made to extend the coverage of new value to all the other fire insurance risks, i.e., all kinds of buildings which as yet cannot be covered at new value, and beyond that also to furniture; and this will be followed up by demands for coverage of new value in other, and possibly in all the other insurance branches. Indeed, a dangerous prospect!

Photo By P. & A.

To Put An Added Burden on Policy Holders By Means of Excessive Taxation May Mean Less Coverage Where Protection is Most Needed

Taxation of Insurance Companies

Brief Survey of A Much Debated Subject With Comment On Different Tendencies In Various States

By AVARD L. BISHOP
Professor of Business Administration
Yale University

"IN THIS world nothing is certain but death and taxes" is a maxim attributable, it is said, to Benjamin Franklin. There are few, if any, who doubt the wisdom of this observation. Someone shrewdly has pointed out, however, that the normal individual almost instinctively clings to life most assidiously, whereas his natural inclination seems to be to shun taxes. So far as the taxes are concerned, they have been with the human race for a long time, and, unquestionably, they will continue to remain with us in spite of their general undesirability.

This is neither the time nor the place to discuss abstract theories of taxation. The subject of taxation is a most complex one, as illustrated by the divergence of opinions among tax experts themselves even with respect to what are supposed to be the most elementary principles of taxation. More than a century and a half ago, the eminent economist, Adam Smith, was supposed to have laid down, once and for all time, the fundamental canons of taxation. These were followed by economists and other interested parties for some generations, but in more recent times they have been so dissected by critics that they no longer are universally accepted as fundamentally sound.

ALTHOUGH there is more or less divergence of opinion among competent authorities of the present day regarding the fundamental principles that are the basis of a sound system of taxation, the laymen who have to pay the taxes are entirely in agreement on one important point, namely, the undesirability of paying taxes. One would be astonished at any sensible private individual or corporate official stepping forward and announcing that he, as an individual or as a representative of a corporation organization, desires to assume a larger tax burden than already has been placed upon him.

The purpose of this discussion is to make some observations regarding the twentieth century method of taxing insurance and insurance companies. That insurance has been taxed aplenty no one will deny. We have just used the expression "insurance and insurance companies" advisedly; for the makers of the tax laws concerning insurance probably believe, in most cases, that they are taxing the insurance companies. As a matter of fact, apart from the tax levies upon the real and personal property of the insurance companies, the policyholders, in most cases, instead of the companies actually pay the taxes which are collected from the companies. More will be said about this later, because it is a most important point. In the meantime, it may be well to point out at once that we do not hold the opinion which some have voiced that the nature of the insur-

ance business (particularly the life insurance business) is such that it should not bear its proportionate burden of taxation. We are not aware that any sensible person has claimed that the real and personal property of insurance companies should not be taxed as is the property of any other corporate enterprise; there is no objection to this item of taxation from any quarter. The objection comes, primarily, from the so-called special taxes, over and above property taxes, that are levied upon insurance.

The taxation of insurance companies is undertaken and carried through by the federal and state governments and at times by local governments as well. With respect to federal taxation of insurance, there has been relatively little objection, so far as we have been able to learn. Not so long ago, the federal government was levying a tax on stock life insurance companies based on their investment income. It may be well to mention in passing that the State of Connecticut has used the same basis for the taxation of her mutual companies. The federal government has taxed fire and marine companies on what is known as their "underwriting income." The federal laws regarding insurance taxation have changed so greatly during the last few years that it seems unwise to enter into any details. About four years ago the Chamber of Commerce of the United States of America made an investigation of the federal tax situation with respect to insurance. It has been reported that the consensus at that time among experts was that no great changes seemed desirable in federal taxation principles as they applied to insurance. It did seem desirable, however, that insurance should share with business as a whole whatever general reduction in taxes the federal government could allow. In spite of the findings as referred to above, with respect to federal taxation of insurance, we are inclined to the opinion that, particularly within the field of life insurance, there is considerable criticism among experts of the method of federal taxation. But we are not specially concerned here with life insurance.

THE general system of taxation of insurance and of insurance companies on the part of the numerous state governments of the United States seems to be, on the whole, exceedingly obnoxious to insurance experts. Originally, I suppose, the justification for the individual state governments levying special taxes on insurance (by special taxes we mean those other than taxes on real and personal property), was that, under the American system, the state governments, rather than the federal governments, have jurisdiction over insurance. Accordingly, it became the custom for states to undertake to regulate and control insurance. The original motives prompting such action seems to have been to assure the public that the insurance companies would be kept solvent, and that their contracts were valid. In course of time, other motives for state regulation appeared, such as the protection of the public against excessive insurance rates, and against discrimination in the making and applying of such rates. As almost everyone knows, the field of state regulation and control of insurance has expanded greatly until nowadays there is considerable complaint against the alleged evils of excessive state regulation. Some of those who complain the loudest point to England as an outstanding example of a country where insurance is regulated but little and where there is practically no dissatisfaction either with rates or with the way in which the business is conducted in general.

Along with the growth of state regulation of insurance there has been a noticeable tendency for the states to place increasing burdens upon the business of insurance in the form of taxes and fees. At any rate, this is the claim. In order to exercise supervision over insurance and insurance companies a great many of the states have created an Insurance Department; this, of course, has added to the cost of running the government. Where such a department does not exist, there naturally is some cost in regulating insurance, even though the duties of regulation and law enforcement with respect to insurance is in

(Continued on page 31)

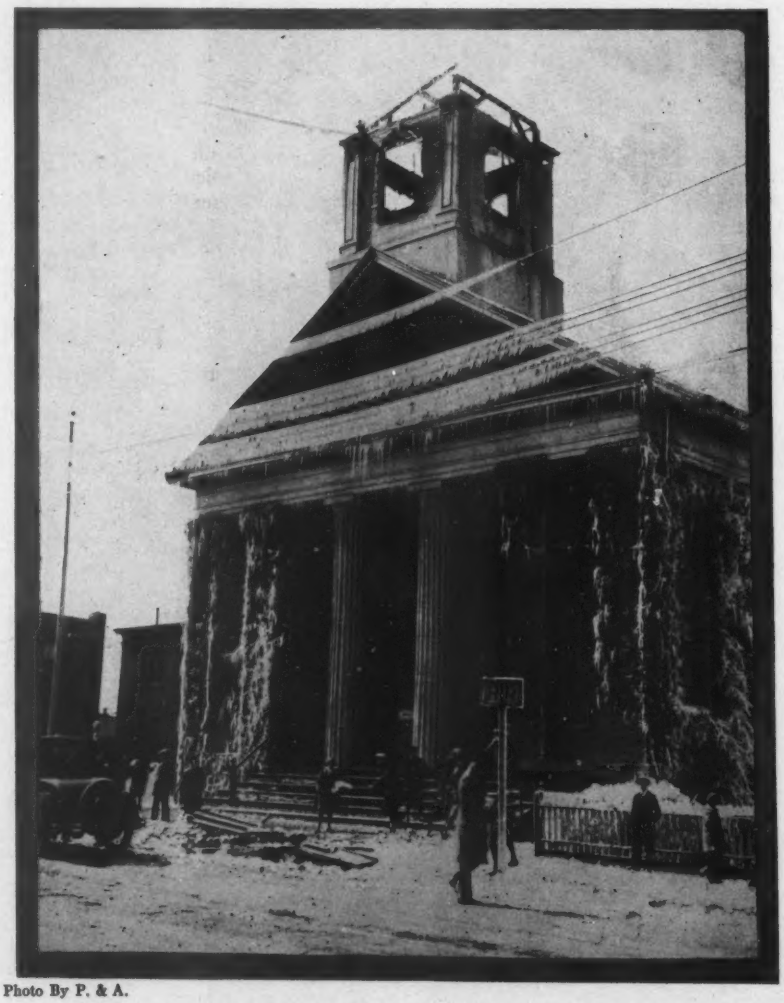


Photo By P. & A.

This Church Was Saved By Firemen After the Tower Was Set Ablaze By Sparks

Photo by International News — Photo by Underwood & Underwood

Inspection of the Ruins After a School Fire After the Disaster Can Never Compensate for the Property and Young Lives Lost

Five Schoolhouses Burn Each Day

Flames Which Spell Disaster to Many Young Lives and to Much Property Occur With Startling Frequency

By J. PAUL ATWOOD

LITTLE red schoolhouses, and big red schoolhouses, some of them new, and some of them old, but all of them filled with children, go up in fire and smoke at the rate of five a day. At the end of every school term when the roll is called, there are many names to which no one answers "present." Fire has cut down the attendance roll.

Parents.- teachers associations are continually agitating for more and better schools. And new schoolhouses are continually being built, but many of them are built to burn. Commodious and elaborate structures, including all the latest improvements, gymnasiums, swimming pools, efficient laboratories, constructed with fire resistive walls are often made vulnerable to flames by neglect of some small precaution.

A few years ago, the National Fire Protection Association reported that ninety per cent of the schools from Maine to California were fire traps. Many new buildings were listed as highly dangerous. Although pleasing to the eye, they contained features which made them highly dangerous.

Unfortunately, the demolition of old schoolhouses, and the erection of new ones does not necessarily mean the elimination of the fire hazard. Indeed, there may be far greater danger of fire in the new building than there was in the old. Few modern schools are without cafeteria facilities, and this cooking in the school building creates a new and additional fire hazard. Chemicals and machinery used in laboratories and workshops, moving picture films often shown without attention to usual fire precautions, all add to the dangers with which our school children are surrounded. Although fire engines race through the streets many times every day to school fires, too many parents are lulled into a false security by the apparent strength of brick or stone walls.

There are always explanations and excuses after fires. And comparatively weak excuses may be effective, because the fire wipes out the evidence which would place the blame where it belongs. But it was not easy for certain officials to explain to one firechief, who had made an inspection of the schools in his city, why two exits were locked while school was in session. Nor was it much easier to convince one group of enterprising parents that a stairway equipped with iron hand rails and wooden treads, and stairway cut-offs constructed of wired glass set in wooden frames would be safe in time of fire.

IN almost every case, the greatest loss of life has been suffered because of entire unpreparedness for the emergencies which arise during a fire. School boards nod their heads in complete satisfaction when they hear that their school buildings can be emptied in a minute. Certainly pupils and teachers should be safe when the building can be evacuated so promptly. But no one considers that smoke filled halls and angry flames may cut off some of the usual exits, and create uncontrollable panic in children who under normal conditions march quickly to safety.

The disasterous fire in a parochial school at Peabody, Massachusetts, in which twenty-one children perished, proved that too much dependence cannot be placed on fire drills. The day before the fire, the 672 pupils and twelve sisters had left the building in a minute and a half. At eleven o'clock the next morning, twenty-one children were dead because they could not make a safe escape through the flames.

The sister superior discovered the fire, and quickly gave the alarm for a fire drill. The march to safety began in an orderly manner. But the fire gained headway quickly. By the time the pupils from the second and third floors were filing down the stairs, the halls were filled with smoke. There was a vestibule with a small inside door, and when one girl fell at this point, twenty others were quickly piled on top of her. So tightly were they wedged together, that rescuers on the outside were unable to help the living to safety.

Although too much dependence must not be placed upon fire drills, they have proved effective in many

cases. Only a few years ago, a large high school in Brooklyn, New York, was emptied of 1,300 pupils and teachers within a few minutes, although a fire was raging in the attic. The same orderliness which had become habitual during "practice" drills was maintained when there was actual fire. But it should be noticed that such orderly exits are far more likely when the flames and smoke are not visible; when the children either do not realize, or see their peril. Children and adults have a far better chance of remaining cool under danger *just so long as they cannot actually see the danger.*

Many communities have enforced regulations concerning fire drills which have proved most important in times of fire. Of all these rules, the one requiring that the roll be called after every drill is probably the most important. When fire destroyed a building at Wellesley College some years ago, the roll call showed that eight girls were missing, although it had been supposed that everyone had left the building. A search was quickly made and the girls were rescued.

Although the fire hazard is at least as great in colleges as in grade and elementary schools, some states do not require fire drills in schools of higher learning. Presumably college students are above the need of fire drills. Many states, however, refuse to take this point of view. In New York, monthly fire drills are compulsory for all multi-storied schools, and failure to comply with this rule makes the principal subject to a fine of $50.

BUT fire drills can never make up for structural weaknesses in school buildings. No matter how perfectly drills are conducted, schools with inadequate exits defeat the most perfect drill master. The increasing use of school auditoriums as community meeting places also minimizes the value of drills, and stresses the necessity for buildings which are structurally safe from fire. Lectures, recitals and club meetings are often held in schools. Adults who have never been even given the benefit of the same training as have their children, are subjected to the same fire hazard. Two of the most disastrous school fires occurred during entertainments when relatives and parents were present in large numbers.

A play was given in the Cleveland School, at Camden, South Carolina, on May 17, 1923. The auditorium was located on the second floor, and there was only one narrow staircase leading to the exit. Even when the audience had entered the building, there had been considerable crowding on the stairs. But when an oil lamp started a fire, there was such a rush for the stairs that seventy-seven people lost their lives. Crazed parents and children fought each other in an effort to reach safety. A stream of people attempting to return to rescue their families blocked the narrow door through which others were attempting to reach the open. Within twenty-two minutes, there was nothing left of the school house but smouldering ruins.

Unfortunately, it is not human to heed others' experience. A little more than a year after the Camden catastrophe, another entertainment ended in a heavy loss of life. Children and parents prepared for weeks for the Christmas party to be given in the little one room schoolhouse at Babbs Switch, Oklahoma. Everybody in the community was in attendance when Santa Claus began to distribute presents. Everything went well until the Christmas tree fell to the floor, with all its candles blazing. In attempting to right the tree, the clothing of the Santa Claus caught fire. There were a hundred and fifteen children and parents in the audience, and there was only one small door. A second door was blocked by coal. There was no water nor extinguishers. In the panic that resulted, thirty-six persons were lost, and entire families wiped out.

SPRING MEETINGS

National Association of Automotive Mutual Insurance Companies and National Association of Mutual Casualty Companies

Chamberlin-Vanderbilt Hotel
Old Point Comfort-Va.
April 25-26-27
1929

There would be a far greater loss of life from school fires, if the buildings were occupied at all times. Many serious conflagrations have occurred over the week-end and at night when there are few, or no people in the building. In 1923, in the same year as the Camden disaster, a fire started in a closet of the Worcester High School of Commerce, and before the fire was put out, the city of Worcester had suffered a financial loss of $15,000. How much more serious might have been the results of the blaze can only be conjectured, for the fire occurred on a Saturday morning when the school was empty.

The Worcester fire started in a closet in which odds and ends and probably rubbish was stored. If the janitor had been a better and neater housekeeper, the fire might have been avoided. Experts have frequently pointed out that better janitorial housekeeping would decrease the fire hazard. More frequent disposal of waste papers and other accumulations, would remove one of the fire danger points. Statistics show that fewer fires have started in the basement of high schools than in elementary schools. This is probably so because of the greater use to which high school basements are put. Instead of serving merely as a storage space, they are in constant use, and therefore must be kept free of rubbish. The importance of better school cleaning was emphasized by the Collinwood fire of twenty years ago. The Lakeview School burned one Wednesday morning, with a loss of 173 children and two teachers. The fire started in a storage place under the stairs.

As in many other similar catastrophies, the great loss of life at Collinwood was the result of panic when one of the usual exits was blocked. The school was considered completely safe. It had two exits and an outside fire escape; yet when the need arose, the exits proved entirely insufficient.

EVEN the most carefully built schools are subject to fires. Fire resistive materials may be used throughout, and interiors may be planned so that they offer the least possible fuel. Still, there may be a fire. Therefore, no matter how well built the school, it is highly important that the best way of evacuating the building quickly and safely be provided.

Outside fire escapes have come to be looked upon with disfavor. Even without the excitement of actual fire, they are usually too steep and dangerous for children to negotiate safe-

(Continued on page 20)

Laboratory Lightning and Its Lessons

Artificial Bolts of Electricity Measuring as High as 3,000,000 Volts Prove Valuable In Studying Means of Protecting Structures In the Open

By F. W. PEEK, Jr.
In Collaboration with
JAMES R. BOOTH

LIGHTNING strikes infrequently but it constitutes an ever present fire hazard which, until a few years ago, was thought to be beyond the control of man. Now laboratory research has again indicated that the impossible can be accomplished. Although the lightning hazard cannot be entirely eliminated, it *can be* reduced to a negligible minimum by the application of recently discovered principles.

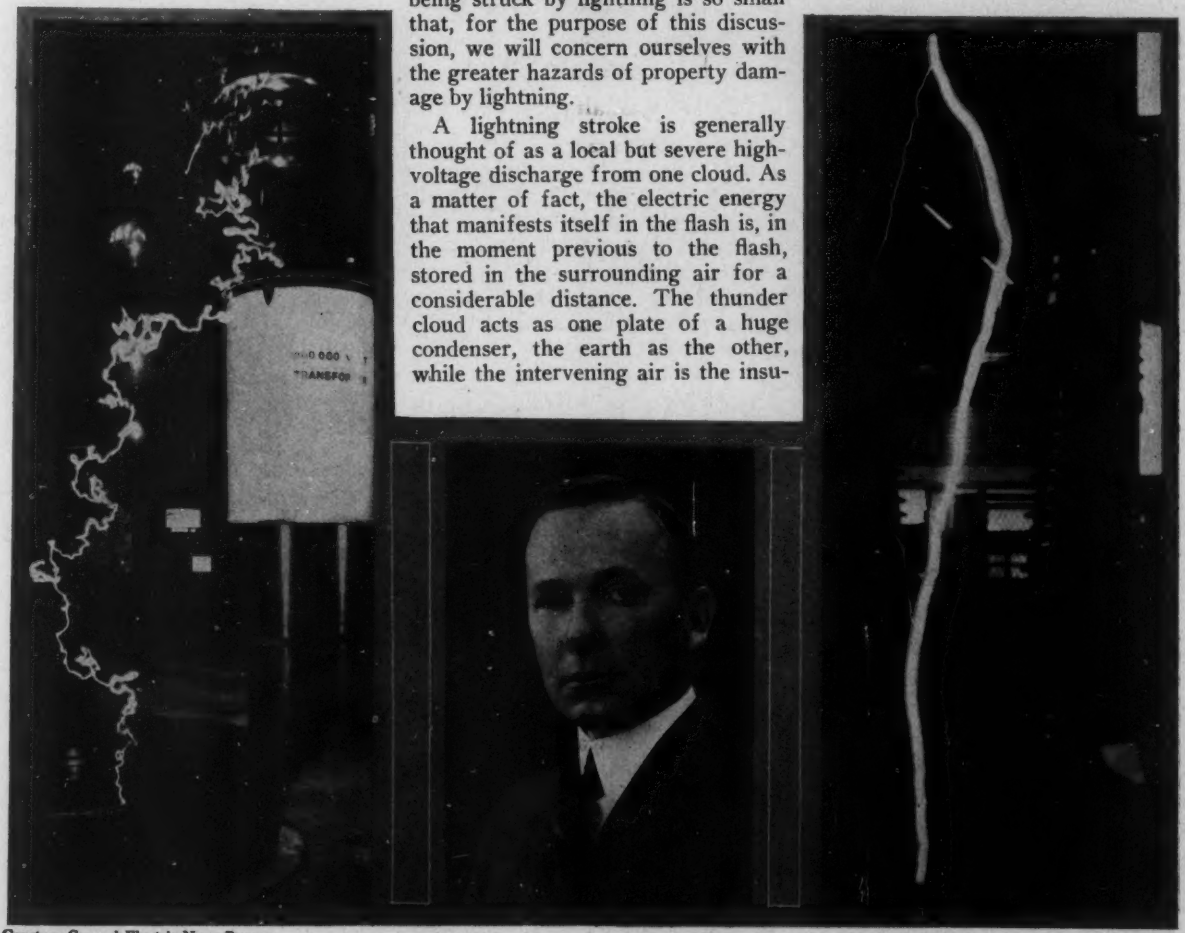
Tall buildings, transmission lines, powder magazines and oil tanks are most frequently struck by lightning. The protection of each presents a separate problem and calls for a varied application of the same principles. While our laboratory work has emphasized the protection of transmission lines, we have also performed many experiments on the relative efficiency of various protective devices for other type structures. We have accumulated a valuable and important body of knowledge and can now intelligently discuss the nature and effect of lightning.

It has been estimated that an ordinary city house, surrounded by houses of equal height, will be struck only once in a hundred years; and the chance that a person living continuously in such a house will be struck, is one in several million. The person who spends part of his time in a modern office building is even safer. The possibility of any particular person being struck by lightning is so small that, for the purpose of this discussion, we will concern ourselves with the greater hazards of property damage by lightning.

A lightning stroke is generally thought of as a local but severe high-voltage discharge from one cloud. As a matter of fact, the electric energy that manifests itself in the flash is, in the moment previous to the flash, stored in the surrounding air for a considerable distance. The thunder cloud acts as one plate of a huge condenser, the earth as the other, while the intervening air is the insulation. When the voltage between earth and cloud becomes high enough, this insulation breaks down and the energy is dissipated in the short circuit or lightning flash.

The electric energy is changed into heat, light, sound and chemical energy. The light is seen in the flash, while the sound is heard as thunder. Thunder is caused by air waves set up by the explosive nature of the discharge.

The chemical effects of the lightning stroke are often detectable after a storm in the odor of ozone. Each molecule of oxygen is normally composed of two atoms. The electric stroke tears them apart. Some of these recombine in groups of three. Oxygen molecules made up of three atoms are called ozones.



Courtesy General Electric News Bureau

In the Center Is F. W. Peek, Jr., Under Whose Direction the Giant Bolts of Artificial Lightning Shown on Either Side Were Made and Studied at the Plant of the General Electric Company at Schenectady, N. Y.

LIGHTNING, the disorderly, predatory form of electricity is dangerous, not because of its enormous energy but because of its enormous power and its flight. If all the energy of a severe lightning stroke could be put into a storage battery, it would only carry an electric automobile about five miles, or operate an electric iron for a day. However, since this energy is dissipated in a few millionths of a second in a limited space, the effect is a terrific explosion and the power is millions of kilowatts, though the kilowatt seconds or hours are small.

We are making an exhaustive study of lightning so that we can provide protection against it. Thus far we have conducted our researches in two ways—by observing natural lightning and its effects on buildings and transmission lines, and by observing artificial lightning in the laboratory. By means of artificial lightning, results which would take years to achieve in the field, can be checked in a few months. For laboratory lightning discharges can be repeated at man's will.

Before we could proceed with our experiments it was necessary to perfect the apparatus by means of which we could make artificial lightning and instruments to measure its values.

Although our first lightning generators were built for lower voltage, the present one will supply directly 5,000,000 volts above ground. It consists of high capacity condensers, corresponding to a cloud and the earth, separated and insulated by means of glass, which is relatively more compact than air. As in the case of cloud lightning, the electricity is stored at a relatively slow rate and discharged at an enormously rapid rate in a few millionths of a second.

The development of instruments has been so successful that natural lightning as well as artificial lightning is now readily measured. When lightning strikes a transmission line, or near a transmission line, electric waves are sent over the line at the velocity of light or about 1,000 feet in a millionth of a second.

These waves cannot be seen as water waves can be seen on the sea. However, since they tell the story of the lightning stroke, an instrument was devised to record them photographically. This marvelous instrument connects itself to the line and records the shape, voltage, current and length of the wave, as it speeds by at the rate of 1,000 feet in a millionth of a second. It must operate quickly when the wave reaches it. Of course, the picture cannot be drawn with anything having mass. So a pencil of electricity is used! Hundreds of artificial waves and a number of natural ones have been measured in this way. When a lightning wave reaches the open end of a transmission line, it doubles up in value just as a water wave splashes up to double value when it strikes a sea wall. Thus, when an electric wave of 5,000,000 volts is sent over a line, it gives, if the losses are not too great, to 10,000,000 volts. We have indirectly attained approximately that value in our laboratory.

The artificial lightning that we make in our laboratory is as potent as natural lightning. It can be as destructive, too. We have made and let loose lightning which could cause enormous havoc if it were to strike people or buildings. We know now how to make thunderbolts as powerful as mighty Thor's.

ARTIFICIAL lightning, like natural lightning, does many queer things. In our laboratory, we have seen large wooden posts split by a 1,500,000 volt discharge. Running longitudinally through the center of the stick was a hole less than one thirty-second of an inch in diameter. The wood around this hole had a fuzzy appearance, but it did not appear to be burned. Immediately after being blown apart, the wood was saturated with the pungent odor of the gases of destructive distillation. Apparently these gases are formed suddenly by the discharge, and produce such high pressures that the wood is blown apart with great violence. At 3,500,000 volts, wood telephone poles 20 feet long have been readily split.

Even metal can be punctured. A stroke of lightning from our generator has pierced metal covered by a glass plate. The holes were apparently caused by the sudden formation of gases between the metal and the glass.

When lightning strikes the earth at some sandy spot, its path is often defined by a glasslike tube. This tube, which may have branches like a tree, is, in fact, sand fused into glass by the lightning current. Such tubes are called "fulgurites" and can also be produced by artificial lightning.

If lightning damage were limited to that caused by direct strokes, we would all have less to worry about. But a building may be ignited by lightning without being hit. Any lightning disturbance within a few miles may produce sparks by means of electrostatic induction. Far away there is a lightning flash: right next to us a spark jumps from one conductor to another. Such a spark, however, can only be produced by electrical conductors which are almost in contact, or are making a poor contact. Experiments have proved that cotton can be ignited by sparks electrostatically induced between the metal binding strips which hold the bale together.

Many lightning fires have been avoided by the proper placement of lightning rods. Oil tanks which are most inflamable, and in great danger from lightning can be protected, except in unusual cases, by lightning rods. Each rod protects a certain area, and by providing a series of rods, the protected areas interlock so that the entire tank is safeguarded. We have conducted many experiments to ascertain the most efficacious use of rods.

IN OUR study, we used models built to scale. For the tests we varied both the voltage of our bolt and the size and shape of our artificial clouds. We believe we have covered every possible condition, and

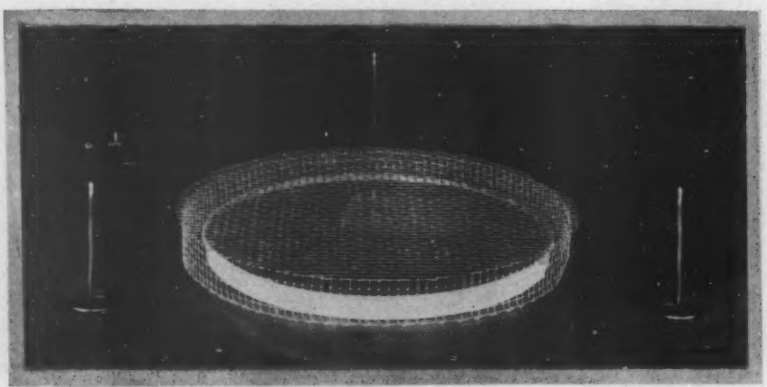
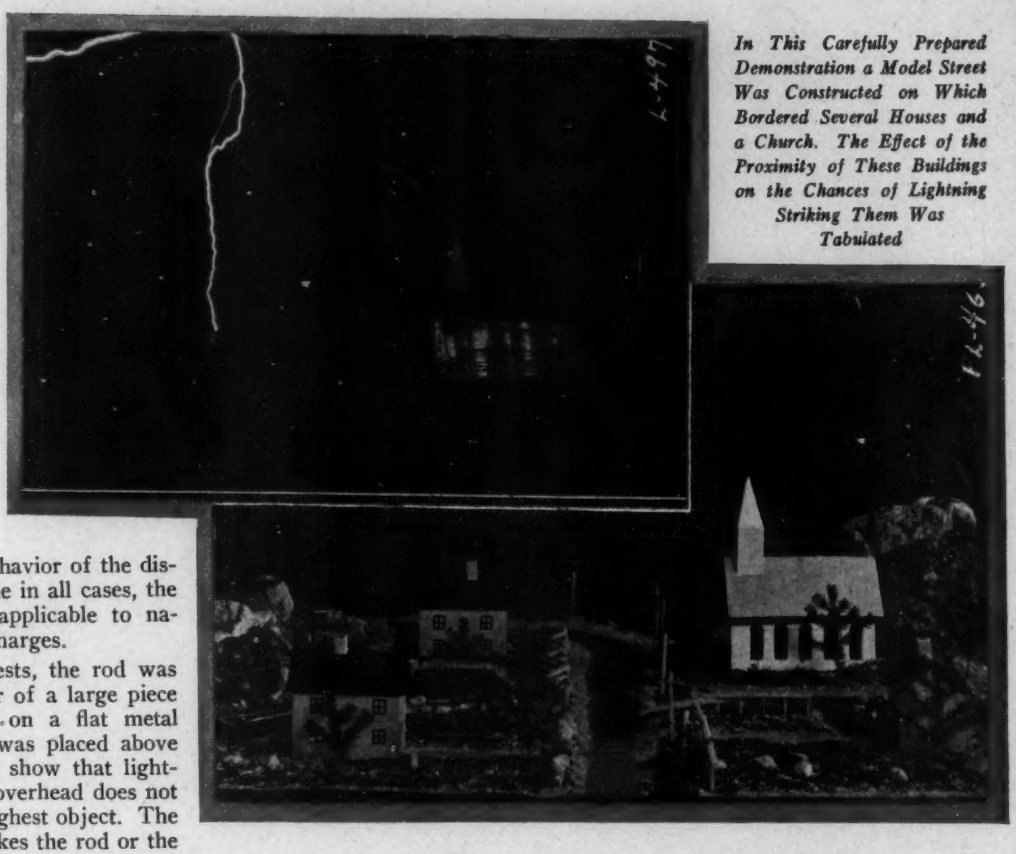


Photo by General Electric News Bureau

Method of Protecting an Oil Tank with Screen and Nearby Poles

A Bolt From The Blue in Model Town



In This Carefully Prepared Demonstration a Model Street Was Constructed on Which Bordered Several Houses and a Church. The Effect of the Proximity of These Buildings on the Chances of Lightning Striking Them Was Tabulated

since the general behavior of the discharge was the same in all cases, the results should be applicable to natural lightning discharges.

In making the tests, the rod was placed in the center of a large piece of drawing paper on a flat metal plane. The cloud was placed above the rod. The tests show that lightning from a cloud overhead does not always strike the highest object. The lightning either strikes the rod or the plane. When the discharge hit the paper a small hole was made. A record was thus obtained of the distribution of the discharges.

The general character of the division of hits between a rod and the surrounding ground is shown in the following diagram. In this specific example, taken for illustration, the rod is located on a conducting plane and is 1.85 per cent of the cloud height. In the upper diagram the storm center is located directly above the rod. Under this condition 84 per cent of the strokes hit the rod, while sixteen per cent of the strokes hit the ground as shown in the shaded area. There are no ground hits in an area between the rod and four rod lengths away.

The division of hits as the storm center moves away from the rod is illustrated in the two lower diagrams. Eventually, a distance is reached when the rod is no longer struck.

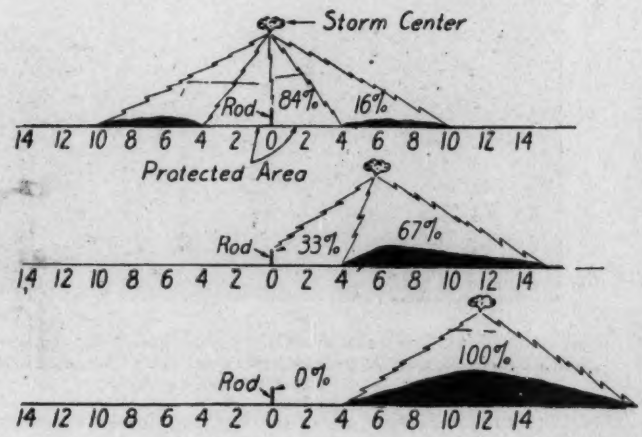
The higher the rod, the larger the number of times it is hit instead of the ground. When the rod is 1.1 per cent of the cloud height, the division of hits is equal, while all of the strokes go to the rod when it is about 2.5 per cent of the cloud height. Over this range, the ground was never hit nearer than four times its height.

The radius of the protected area around a lightning rod, therefore, extends from the base of the rod to a distance two to four times the height of the rod, depending upon the altitude of the storm cloud. The chances of a building in this protected area being struck depends upon whether or not it extends above an imaginary line drawn from the top of the taller building to the edge of the protected area.

These laboratory experiments were borne out last year in a natural electrical storm over New York City, when the World Building was struck. Had this building, which is approximately 350 feet high, been 200 feet nearer the Woolworth Building which acts as a lightning rod, so as to come within its protective cone, the bolt would undoubtedly have hit the Woolworth Tower or some building at a greater distance, outside the protected area.

Our experiments offer a means of estimating the chance of objects of different heights being struck during a thunderstorm when the cloud is overhead and of sufficient voltage to discharge to earth.

(*Continued on Page 29*)



How a Lightning Rod Protects Objects on the Ground; and Effects of Elevation on Danger From a Storm

***One of the Most Spectacular of Wrecks** occurred (upper left) when a locomotive smashed itself and several cars into shattered bits of debris as it crashed into a freight train with fatal results.*

***Flames in the Neighborhood of Oil Tanks** (lower left) put an added zest into the work of conquering a blaze that held grave menace of explosion over the heads of many firemen.*

INSURANCE ... A UNIV

***Now Is the Season of Floods** and this (upper right center) is a scene typical of what has happened in many towns during the past few weeks when rivers went on rampages in many places.*

NIVERSAL NECESSITY

Falling Planes Are a New Hazard *(upper circle) to life and property. In this case the aircraft dropped into the water, rendering salvage difficult and apparently not very profitable.*

Tornado Lifted Heavy Weight as If Cardboard. *Among other playful freaks (center) of this big twister, a large steel cook stove was tossed about with ease.*

Fireboats in Action at Night *(lower right) provide a great show for spectators. Picture in lower circle is of firemen digging to locate smoldering flames under tangled debris.*

JOURNAL OF AMERICAN INSURANCE

APRIL 1929

VOL. 6 No. 4

Published Monthly by the American Mutual Alliance
180 N. Michigan Avenue
Chicago, Illinois
A. V. Gruhn, Editor and Business Mgr.

Democracy Making Its Laws

THE MILLS of legislation are grinding in no less than forty-six states and territories of this great republic as April sun and shower bring to birth the beauty of a new Springtime. This tremendous law-making activity is a rather solemn and overwhelming thing to think about. More than a hundred million people, through their chosen representatives, are either amending the rules by which their common affairs must be regulated, or making new rules to meet new needs which an increasing complex civilization has developed.

It is a popular indoor amusement with Americans to berate their legislators, individually and collectively. We are very conscious of the sins and follies of democracy. We are inclined, perhaps, to magnify them, or to dwell upon them too exclusively. But let anyone propose that we should abandon this system by which we make our own mistakes, and, in the process of trial and error, learn our lessons, and it will become apparent speedily that we think more of it than we often admit. There are few of us who would be willing to exchange it for any other system which the world holds, and least of all for the rigid dictatorship of a Mussolini—with all its boasted efficiency—or the arbitrary class rule of the soviet.

IN SPITE of its faults, which are inherent in human fallibility, the system works. How else could we have today the freest and most prosperous nation on the face of the earth? How else could we have what men everywhere confess to be the land of greatest opportunity? These conditions are not chance results. They are the fine fruit of a self-governing people.

It is not difficult to select from the vast multitude of laws which have been written upon the statute books many which justly invite ridicule or condemnation. And yet these are but an insignificant fraction of the total, which in its completeness constitutes the foundation and framework of American order and liberty. Little reflection is needed to reach the conclusion that in the main the lawmakers for democracy have done well. They have wrought constructively. The edifice which commands our pride is proof.

The majority of our legislators are men of sense and principle. They seek the greatest good of the greatest number, and nowhere is it more nearly attained than in the United States. We too frequently underestimate the difficulties with which they must contend. It would be well for some of their critics could they have the experience of service in a state assembly. Their eyes would be opened to the immensity and intricacy of the tasks and problems which confront our representatives. No private enterprise has anything like it in variety, in conflict of interests, in ultimate importance.

To the many pressures which impinge upon the mind of the legislator there is added the pressure of time limit. A score of measures, involving huge expenditures, enmeshed in multiplex details, may cry for action as the day for adjournment approaches. It takes a clear and steady mind to escape confusion. The wise and honest legislator will decline to be rushed into action. He and like-minded colleagues will rightly employ such methods as the legislative process allows, to insist, even at the price of delay, upon opportunity for inquiry, investigation, the assembling, relating and interpreting of facts.

HE WILL be vigilant in the hour when the cry is "Hurry, Hurry!" lest there slip through his guard some cleverly fashioned phrase or paragraph, disguised in the garb of innocence, but replete with possibilities for mischief—a so-called "joker." Invaluable is that member of a legislature—and seldom does any representative assembly lack one or more—who pounces on such a masquerading cause of trouble, and exposes it in all its guile. Disclosed to his colleagues it cannot survive. Many a bad bill, slipping on greased ways to enactment, has been checked and defeated by these watchful and faithful members.

There is developing in the legislatures of the country a clearer understanding of what is in fact public interest. It is evidenced by increasing opposing to use of the taxing power, for example, in a manner which places undue handicaps upon private enterprise. It is realized that this means merely the laying of heavier burdens upon the people as a whole. In the field of insurance, which particularly concerns us, we note in some quarters a reaction against the old tendency to tax insurance companies beyond the requirements of administration. When this is done it is, of course, the people, as policy-holders, who pay the bill. Similarly we note the disappearance of that prejudice which vents itself by placing arbitrary limitations upon the field of risks in which mutual companies may do business. Here and there it still lingers, but wherever the facts are faced in impartial spirit it is seen to be without rational foundation.

THESE are illustrations, drawn from the sphere familiar to us, of the progress which democracy is making toward a more intelligent discharge of its law-making functions. Those of us who, over a long term of years, have watched the development of the legislative process in the states and territories of the Republic cannot be other than optimistic. The rising level of intelligence on the part of the people, resulting from the spread of education, holds the promise of an ever increasing efficiency in government. Mussolini is welcome to fascism. Our faith and hope are firmly based upon the outlook for democracy.

Life-Lights Against a Business Background

The Major Interests of Spring

By S. J. DUNCAN-CLARK

WE were waiting for the 8:13 on the electric line, familiarly known as the "business man's special."

"My tulips are three inches above the ground," remarked Belvidere Jones challengingly.

"That's nothing," said Simon Ralston, "my peonies must be at least four inches high."

"And I have a clump of scyllas almost in bloom," boasted Theodore Goddard.

"Back up, all three of you," said I. "My crocuses have been flowering for a week."

And then we fell to talking about the comparative merits of our respective gardens, covering in the discourse such matters as soil, top-dressing, drainage, fertilizer, varieties of tulip, peony, larkspur and other growing things, including the accursed weeds.

"I watched a robin callously dragging a worm from its lair this morning," said Jones. "I wished I had both his leisure and his worm—I would go fishing."

"What do you know about the leisure of a robin?" asked Goddard. "That bird was working for his breakfast, and you covet his worm just to assist you in loafing. You ought to be ashamed of yourself."

"But I'm not," said Jones. "Moreover I'll bet you're planning right now to take the first chance you get to try out that new driver I saw you carrying home last night."

Goddard grinned like a caught schoolboy. And the conversation veered to golf.

THUS, before we reached the terminal we had touched on the three major interests of Spring—gardening, fishing and the lure of the links. Excellent interests, all three of them, and no less important in the making of a man's life than his business. The man who does not find place for some one of them, or for some substitute of like value—if there be any—is cheating himself. He may be piling up a balance on the profit side of his financial ledger, but in health, in disposition, in happiness he is almost certainly running into the "red."

Chief of their values is the fact that each of them takes a fellow out under the sky, and puts the sod beneath his feet. It helps him to realize that man originally was a child of Nature, and not of civilization. In its way there is much may be said for civilization, but not everything. In making man over, its work has not been wholly satisfactory. For all the comforts and conveniences it has given him, it has exacted a big price. Fallen arches, hardening arteries, high blood pressure, irregular heart beats, temperamental digestions, imperfect vision—but the catalog is depressing; we prefer not to dwell upon it.

There are many great and worth while tasks which civilization calls upon man to do, but it, alone, cannot supply the strength with which they may be done. If a man gives himself utterly to its demands he must fail in meeting them. It exhausts, but it does not replenish. It may furnish stimulants which afford a temporary help when the last ounce of energy must be called upon for the final push, but the stimulant adds nothing to what is already in the reservoir. It merely whips the flagging human into action, and hastens the depleting of his store.

It is to Nature we must look for a renewal of physical vitality. She conducts the only honest filling stations—free air for flat tires and gasoline for emptied tanks. The man who intelligently values his business, who wants to enjoy in full measure the undoubted blessings which civilization has provided, will make frequent calls upon Nature.

IN recent years much has been said and written about the wisdom of consulting a health specialist at regular seasons, and getting a report upon one's condition—an audit of heart and lungs, of kidneys and digestion. That is common sense. But if one wants to get a good report he will consult Nature more often than the physician. He will give the expert nothing to do but to check up on the efficiency of Nature in keeping her child in good repair.

Air, earth, water, fire—the philosophy of the ancients regarded these as the four essential and primary elements of the universe. We know better today—that is we know that each of them can be resolved into other elements; but we have found no substitutes for them as factors contributing to the physical fitness of man.

By some strange alchemy they combine to build health, to make red blood corpuscles, to store up energy in the human battery.

THERE is a magic in the soil, whether the sod be turned by the spade that cultivates a garden, or by that which seeks the worm to tempt the fish. Perhaps the magic lies in the unwonted labor for sedentary muscles, in the sweat which exudes from over-civilized pores. But I think the smell of the moist earth in the nostrils of man is a potent tonic; I think the feel of it in his fingers, as he crumbles the dark clods, has a power for good.

And the air which the trees breathe is better for the lungs of men than that which palpitates above the asphalt, mingled with the exhaust from ten thousand automobiles and the carbon of smoking chimneys. The blood starves on such food.

The water of lake and stream, the fire of the sun—these, too, man needs. They are part of his inheritance, without full use of which he is impoverished. Civilization has given us science, and science is today telling us that the light of the sun is life and health.

So the major interests of Spring are rightly termed. They are not to be scorned. The wise man adjusts his business, which is the means to a livelihood, so that he may find sufficient time for these interests which are the means to a life.

Down to Earth

Husband of Authoress—"Will you be much longer writing that novel?"

Wife—"I am just at the death scene of the hero."

Husband (politely)—"Good! And when he's dead, would you mind sewing on this button for me?"—*Brooklyn Eagle.*

Much in Little

In the Swank automobile was Mrs. Swank's pocketbook, which contained a wrist watch, an electric percolator, two umbrellas, two automobile robes and two pairs of pajamas.—*Ad in a Muncie (Ind.) paper.*

Ker-Flop!

Smith—"It is not the cost of the car that worries the average motorist, but the upkeep."

Jones—"And sometimes the turnover."—*Montreal Star.*

School Fires

(Continued from page 12)

ly. Modern builders and educators have been experimenting for many years to find the best means of removing children from a burning schoolhouse. In California, many schools have been equipped with a slide similar to those used at amusement parks. To escape from the building, the children need only slide to safety. It was part of the California plan to have the children become accustomed to the chutes during normal periods, by allowing them to use them at recess time. But it has been pointed out that under fire conditions, the children would probably pile up at the end of the chute, and that injuries and even death might result from the struggles to extricate themselves.

Ramps have also been built by some communities which have noticed with what success such means of egress have been used by hospitals. But educators who have had considerable experience with child psychology warn against the use of these inclined ways. Although sick people can be more easily wheeled to safety along a ramp than carried down a staircase, the ramp provides too great a temptation to frightened children to make one mad dash. It is almost impossible to restrain children, and to keep them in line on a ramp, while this is more possible on a staircase.

A stairway, four or five feet wide, just wide enough for a double file of children to march to the open, is the ideal width. There is enough room for a quick and orderly procession, to move along safely. A wider stairway tends to encourage crowding, and general disorderliness. The best and the safest exit is the enclosed stairway, with fire resistive walls and doors, cutting it off from the rest of the building. Although flames may be surging through the rest of the building, the children leaving by an enclosed stairway maintain their lines because they are saved from the terrors of fire.

Many people forget that in time of fire, plans and arrangements which appeared to be entirely feasible during normal times, prove to be completely impossible. Nothing goes according to plan. In many instances, the discoverer of a fire has run for many blocks to turn in a fire alarm, although there was an alarm located within a few feet. It must always be remembered that people, being only human, are liable to lose their heads in times of the greatest emergency. The greatest degree of safety can be obtained by eliminating the human element wherever possible. Many schools have linked up their own alarm system with the central alarm station of the municipal fire department. In such a case, there need be no dependence on anyone turning in the alarm.

WHEN the great danger to life and property is considered, the lack of precautions and other safeguards developed by school and municipal authorities is even more to be wondered at. Frequently, fires become uncontrollable only because there is not sufficient water with which to fight it. St. Boniface College, of Manitoba, Canada, could have been saved, but the fire fighters found that there were no hydrants on the college ground. The few feeble streams of water which finally were directed against the blaze, proved ineffective. A similar lack of water cost Bridgewater, Massachusetts, its Normal School. The fire there was discovered by the night watchman, before it had made any great headway. But because of an insufficient water supply, the fire spread, and the school buildings including a valuable library, were destroyed. An old heating system which had not been used for several years acted as a flue. The flames spread laterally, and thence upward through the partitions, before the fire could be controlled.

The cause of the Bridgewater fire is listed as unknown. At first it was believed that defective wiring had started the fire, and then the theory was advanced that rats had dragged highly inflammable materials to the attic. But there has never been sufficient proof for either theory.

After every disaster, no matter if it is the sinking of a ship, a failure of an airplane, or a fire, public opinion demands that the blame be fixed, and if possible, fixed upon one particular individual. If all the energy that is expended in placing the blame could only be used in avoiding the disaster, there would be a great saving in human life and property.

Careless smokers are coming in for a greater share of the blame for school fires during recent years. A dormitory fire in which nine boys lost their lives was traced to a cigarette butt which had been carelessly thrown in a corner of a washroom. Smoking was forbidden in the school.

At a girls' boarding school, the smoking of one of the pupils is blamed for a $150,000 damage, and the loss of one woman. From another part of the country comes the report that the carelessness of a workman caused a fire which gutted a new high school.

Besides carelessness, there is the ever present fire hazard from incendiarism. In a four year period, more than a quarter of a million dollars of losses were sustained because of fires which had been purposely started. The administration building of one of the oldest military schools in the country was burned because one boy wanted a vacation. Another western school was set on fire because one of the pupils fancied himself unjustly treated. Although there has been no definite proof that the Hope Development School at Pleya del Rey, California, was fired by one of its inmates, there is good reason to believe that a fourteen year old girl, who did not like the school, burned it and with it twenty-four of her companions and the mother superior.

But the condition of the school building conspired with the demented pupil. Originally, the building in which the school was housed had been used for a hotel. It was a two-story frame building, without adequate exit facilities. And at night, the windows and doors were barred. The school authorities were looking for a new and more suitable building when the fire occurred.

EVEN while looking for better quarters, fire statistics show that it would be highly advisable for a closer inspection to be made of the building which is being occupied. We have spoken of the need for better housekeeping. Not only would it cut down the number of fires which get their hold in rubbish piled in the basement, but it could also decrease the fires which start because of defective flues, or soot accumulations in chimneys. Regular inspection and more careful school cleaning would cut down the fire record.

One community has established a system according to which students, teachers and firemen are detailed to inspect school buildings, and report any conditions which appear to them to be dangerous.

There is always the danger, of course, that firebrands, and sparks from adjoining buildings will set a

(Continued on Page 29)

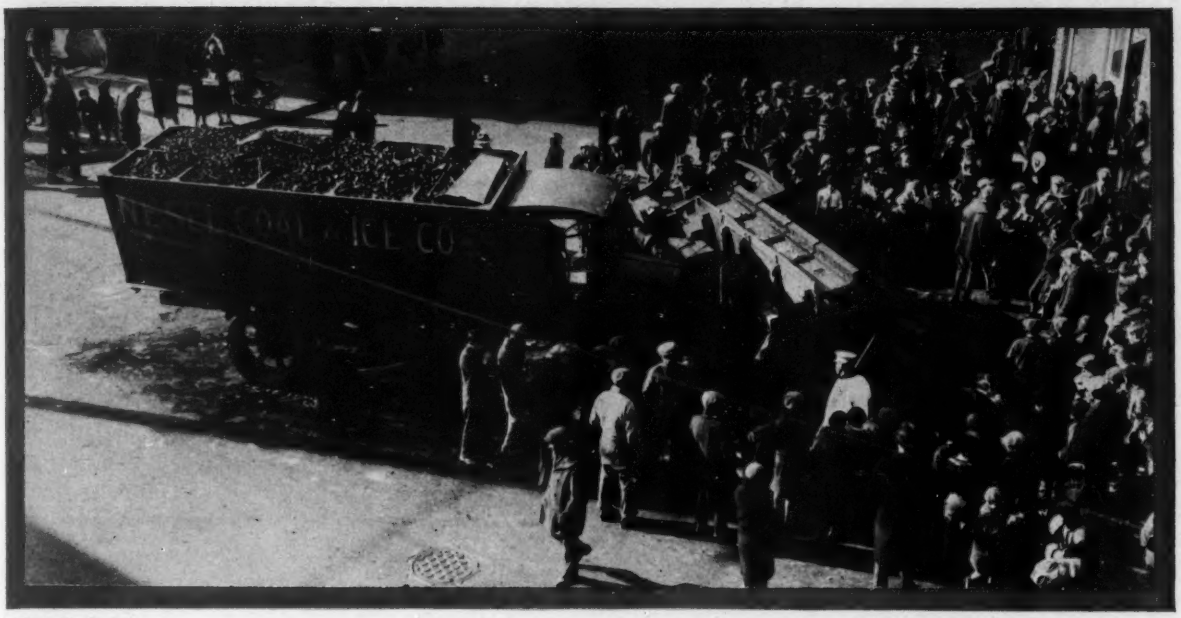


Photo By P. & A.

When Truck Meets Truck There Must Also Be a Meeting of the Minds of the Drivers or a Smash Up Results

Uniform Laws As Solution For Auto Problem

Provisions of Vehicle Code and Model Municipal Traffic Ordinance Sponsored by National Conference of Street and Highway Safety

By A. W. KOEHLER

Secretary, National Conference on Street and Highway Safety

DURING 1929 the legislatures of forty-six states and territories will be in session and a nation-wide attempt has been launched to direct attention to the national problem of uniform legal regulation of the operation of motor vehicles for the dual purpose of promoting highway safety and wiping out the traffic chaos that persists in so many localities.

This crusade is based upon the research and findings of the National Conference on Street and Highway Safety, organized in 1924 by Herbert Hoover, then Secretary of Commerce, which has functioned ever since for the sole purpose of assisting and cooperating in the solution of a problem of outstanding national importance by providing data covering the most scientific methods of control.

Already a number of States have utilized the Uniform Vehicle Code as the basis of revising their statutes to conform with the accepted wisdom of the foremost authorities, whose assistance the Conference has received, while numerous cities and towns have incorporated at least the major suggestions of its Model Municipal Traffic Ordinance. The purpose of the present campaign is to extend the hand of cooperation to all states and communities which can benefit from the labor of the National Conference.

With the manufacture and use of motor vehicles still increasing at an amazing rate, it is recognized everywhere that regulation of traffic has failed to keep pace. For some time it has been patent that this was due to existing laws which in many cases were written upon the books without, perhaps, full opportunity for the mature study the subject is now seen to warrant or in the phenomenal development of motoring have become antiquated. Untangling of the traffic problem has also been hampered by the absence of uniformity of the statutes of the various States and in city ordinances. Conflicts of authority as divided between State and city, and inadequate machinery for effective enforcement of regulatory measures, further complicated the situation in many instances.

As the horizon of the automobile moved beyond local bounds, it became apparent that the propitious time for formulation of a uniform code was at hand. Where motor traffic had been largely intra-State, boundary lines were rapidly disappearing and a wholly unnecessary confusion was being caused by the unfamiliarity of drivers with what was expected of them when they went beyond their home localities. Staggering statistics of the economic losses chargeable to unscientific and inadequate regulation of traffic startled the country, a conservative estimate placing the figure at $2,000,000,000 a year. Twenty thousand people were being killed each year and half a million injured. The realization that something must be done grew and out of this emerged the first national effort to find a solution.

AT THE call of Mr. Hoover the National Conference was organized with the aid of those organizations whose experience and knowledge of traffic problems could contribute most to a workable solution. They included the experts of those national institutions and other authorities of nation-wide renown: The American Automobile Association, the American Electric Railway Association, the American Mutual Alliance, the American Railway Association, the Chamber of Commerce of the United States, the Motor and Equipment Association, the National Association of Taxicab Owners, the National Automobile Chamber of Commerce, the National Bureau of Casualty and Surety Underwriters,

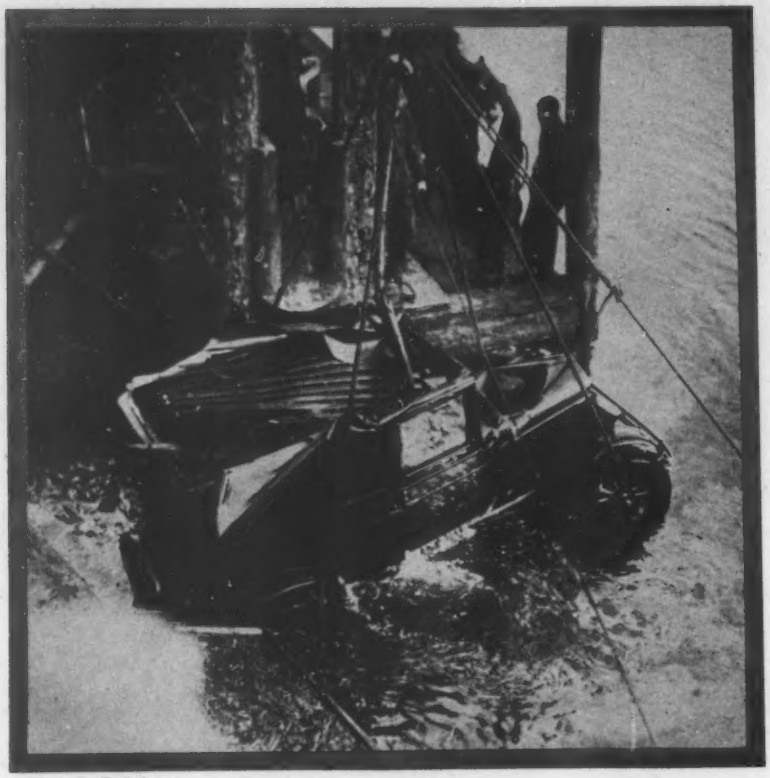


Photo By P. & A.

Five Fatalities Resulted From This Accident in the State of Washington

the National Research Council and the National Safety Council.

Committees were appointed to delve into every vital phase of the traffic problem, including statistics, traffic control, construction and engineering, city planning and zoning, insurance, the motor vehicle, education and public relations. Their findings were reviewed by the first Conference. During the two years intervening before the second conference was held committees continued hard at work on additional questions of enforcement causes of accidents and metropolitan traffic facilities, while a special committee on Uniformity of Laws and Regulations, in cooperation with the National Conference of Commissioners on Uniform State Laws and the American Bar Association, evolved the framework of a Uniform Vehicle Code.

This contribution, embodying numerous features of existing state laws, underwent the closest scrutiny of every authority and interest which could contribute to its perfection and in its final form was considered in detail by the second conference, in which nearly a thousand delegates from every State in the Union, including official representatives appointed by the governors of forty-three States, participated. Divided into four individual acts, the farmers' draft was approved and recommended to the legislatures of the States.

It has never been contended that the code should be adopted by every State without the crossing of a "T" or the dotting of an "I," but it is laid down as a constructively helpful guide for traffic law improvement embodying as it does the thought of the most profound students of the problem and the experience of the whole country. Its use as the basis of their legislations for uniform regulation of traffic for the protection of life and property and the orderly movement of commerce has been widely approved. Subsequently there was drawn up a Model Municipal Traffic Ordinance which, in complete harmony with the Uniform Vehicle Code, provides for the regulation of traffic in its local aspects.

Among States which have already adopted the advanced rules of the road based on the Uniform Code, or have revised their laws to secure closer conformity therewith, are: Pennsylvania, New Jersey, Virginia, North Carolina, North Dakota, Idaho, Michigan, Minnesota, Arkansas, Louisiana, Arizona, Washington, New Hampshire, California and Oregon. Pennsylvania repealed its various laws and adopted practically the complete Code, while North Carolina, North Dakota and Idaho adopted all save the licensing act. The action of New Hampshire, California and Oregon was in the nature of the revision of existing laws. The States most recently acting were Louisiana and New Jersey, the latter's action being directed toward uniformity of municipal ordinances as well as of State laws.

IN ITS final form, as approved by the National Conference of Commissioners on Uniform State Laws and the American Bar Association, the code consists of four individual statutes. They are: "A Uniform Motor Vehicle Registration Act," "A Uniform Motor Vehicle Anti-theft Act," "A Uniform Motor Vehicle Operators' and Chauffeurs' License Act," and "A Uniform Act Regulating the Operation of Vehicles on Highways."

All regulation, the conference agreed, must rest upon adequate State machinery for making it effective. The Uniform Registration Act is, consequently, the starting point. This act provides the organization found necessary by experience to the successful administration of the motor vehicle law. The conference found a wide disparity among the States' disposition of this matter. In some the duties of vehicle registrar were vested in the secretary of state, while others charged various already existing boards or departments with the work. In one western State, the responsibility was lodged with the warden of the State penitentiary.

The registration act of the Uniform Code provide for a Vehicle Commissioner as head of a department of the State government, or a bureau of an existing department, which shall have for its exclusive functions the adoption and enforcement of such administrative rules and regulations as may be necessary to carry out the provisions of the Code.

Predicated upon all available data covering the experience of States and the consensus of experts, the act then proceeds to build up machinery for regulation through registration. Individual sections under the eight titles of the act relate to the manner of registration of all motor vehicles, trailers and semi-trailers, the issuance and use of registration cards and plates, renewals and transfers, registration by manufacturers and dealers and non-residents and suspension of registration upon notice of theft or embezzlement.

The act specifies the manner of records to be kept by owners of "for rent" cars and fixes their liability for negligence of the drivers of such cars. Separate sections determine the circumstances under which registration shall be refused or rescinded and define what shall constitute violations of registration provisions.

The revenue provisions of existing vehicles statutes vary both as to character of fees imposed and the amounts, and, as such revenue measures have no relation to safety on highways, the Uniform Act does not suggest what fees shall be collected. It also permits the individual States to determine exemption from registration fees, when fees are delinquent and the disposition of revenue derived from fees.

TITLE VI of the act covers the driving of vehicles without owner's consent, receiving or transferring stolen vehicles, injuring or tampering with vehicles. The remaining titles deal with the penalties which shall be imposed for the misdemeanors or felonies constituted by violation of various provisions of the act, and the repeal of existing statutes to make way for the Uniform Act.

The second statute of the Code, the Uniform Motor Vehicle Anti-theft Act provides that certificates of title must be obtained before vehicles can be registered. There is fixed the manner of application for a certificate which will be issued by the department and its endorsement and delivery upon a transfer of title or interest, the conditions under which the department may refuse to issue certificates of title or register a car if there is doubt as to whether the applicant is the real owner. An important provision of the act is the requirement that the department maintain engine and serial number indexes of all registered vehicles and that all applications for new certificates and new registrations be checked against these indexes.

The special anti-theft provisions deal with the reports of stolen and recovered motor vehicles, the alteration of engine or serial numbers and receiving or transferring stolen vehicles. Another title provides that dealers in used vehicles must be licensed by the department, for records of purchases and sales and possession of certificates of title and places all fees and revenues under this act in a special Auto Theft Fund to be used for enforcement of the act. Appropriate penalties for false statements, misdemeanors or felonies in violation of the act are fixed.

In these two Uniform Acts and the other suggested State laws and Municipal Ordinance to be mentioned later it will be discerned that the Conference exercised extreme care in not making its draft an arbitrary one in all respects. Broad, general, accepted principles for the control of motor vehicle operation are laid down in precise language which States, it is believed most profitably may incorporate into their codes verbation. Recognizing, however, that in some details States desire to write their own provisions, sections of titles have been left entirely blank or alternatives suggested which do not menace the uniformity the various State codes must have if the country at large is to deal adequately with the universal traffic problem.

A DRIVERS' license law is a contemplated act to provide the Uniform Code with teeth. It provides for an examination of new drivers, properly administered by a centralized department (that of the State vehicle commissioner or department, created by the first act of the Uniform Code) which may be expected to have a material effect on motor vehicle fatalities. The seriousness of the traffic problem is shown in the fact that even in the states that have gone farthest toward a solution of the problem, traffic fatalities are still on the increase. Nevertheless, as compared with states not having a license law with mandatory examination, those having such a law show a 20 per cent better showing since the passage of the law, according to a study

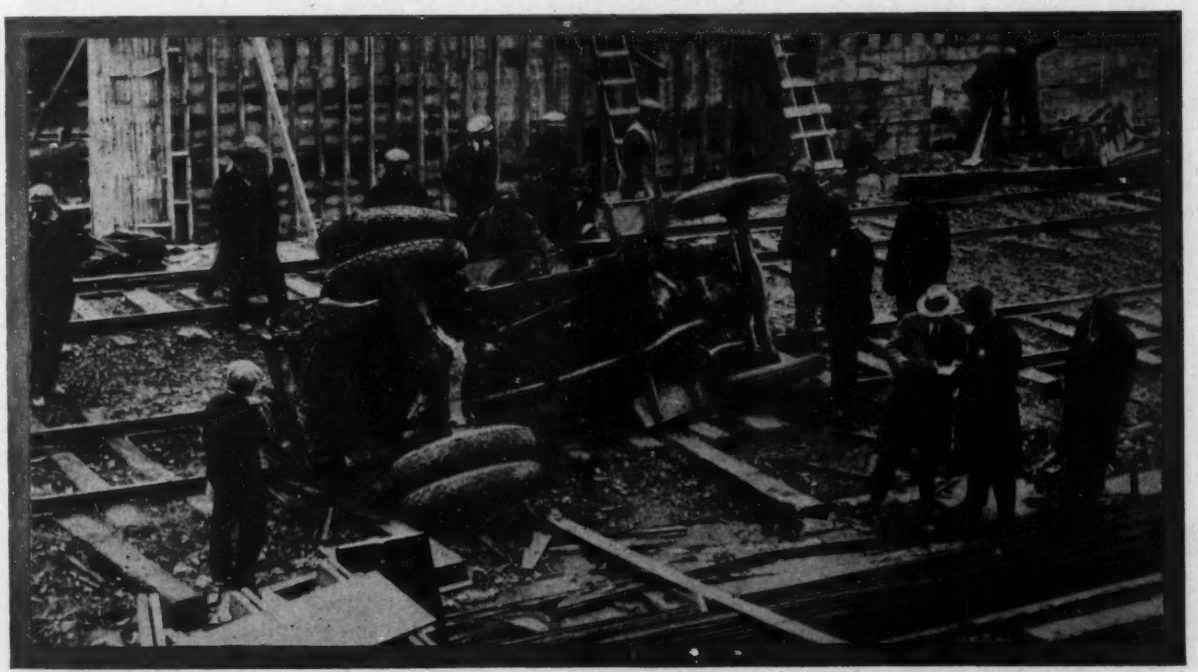


Photo By P. & A.

Despite It's Great Bulk a Truck Was Hurled Fifty Feet When Struck By a Train Near Homestead, N. J.

Auto Laws

(Continued from page 23)

made by statisticians of the National Safety Council.

Such a law was the ideal of the National Conference and in the framework constructed for the benefit and guidance of the States, the following salient points are found:

No person shall drive a motor vehicle on a highway unless licensed by the State vehicle department, except those driving road or farm machinery or operating an official vehicle of the United States Army or Navy.

Non-residents over 16, licensed at home, are exempt; if coming from a non-license State, they may drive their own cars for 30 days.

License is not issued to persons under 16, or chauffeurs' licenses to persons under 18; nor to habitual drunkards, drugs addicts, the insane or feeble-minded, those unable to understand signs in English, and those afflicted with such physical or mental disability or disease as to prevent reasonable control over a motor vehicle.

When the law is first enacted, all persons who have driven for one year without an unfavorable record may obtain a license within three months on written application, but without examination. Thereafter every new driver must first obtain a temporary instruction permit; good for a limited period when accompanied by a licensed operator then, within 60 days, fill out an application for license and pass the examination which includes a brief oral test on the rules of the road and a demonstration of driving ability.

The commissioner may require relicensing not more than once every three years. Chauffeurs' licenses must be renewed annually.

All courts shall report to the State vehicle department all convictions for violation of motor vehicle laws and may recommend suspension of license. The department must revoke licenses in case of manslaughter in operation of a motor vehicle, driving under influence of liquor or drug, perjury in connection with the motor vehicle laws, conviction of reckless driving three times in a year, failure to stop after an accident, any felony in which a motor vehicle was used.

The department may suspend a license if it believes that one of the above mentioned offenses has been committed; that the driver has recklessly or unlawfully contributed to an accident; or that he is incompetent to drive a motor vehicle or is a habitually reckless or negligent driver. The department may suspend or revoke the license for a similar offense committed in any other State.

Any person whose license has been suspended is permitted a hearing before the department, and any person denied a license or whose license has been revoked may appeal to the courts.

The applications of minors under 18 must be signed by the parent or guardian or employer, who then becomes liable for any negligence in driving by such minor. Employers of minors under 18 who permit them to drive and persons who furnish motor vehicles to such minors are likewise liable.

IT IS in the northeastern States, generally, where the automobile problem has been of longest standing, that the drivers' license system has become a well-developed institution. Here the need for cooperation among motor vehicle departments became evident several years ago and resulted in the formation of an Eastern Conference of Motor Vehicle Administrators. A member of this conference recently said:

"Since we began to examine all applicants we have had the general public solidly behind us favoring the stricter methods of issuing licenses."

Operators' licenses serve as identification tags for individual drivers just as registration plates do for cars and trucks. Among other things they serve to eliminate uncertainty in the record system. This system shows which operators are habitual violators and makes it possible to put them on probation or to rule them off the highways.

As the result of its research, the National Conference on Street and Highway Safety holds that one of the chief factors determining the character and scope of a State motor vehicle department seems to be whether or not the State has a full-fledged drivers' licensing system, with mandatory examination and powers of suspension or revocation. If the department has such powers there must be an active administration in close touch with many phases of the traffic problem, including the education of drivers in traffic safety. If the system does not include mandatory examination and power of suspension there is danger of the department's work being conducted in a perfunctory manner as a tax licensing function and the benefits of the modern conception of State vehicle administration are largely lost.

In subsequent issues other provisions of the Proposed Uniform Code and Traffic Ordinances will be considered.

F. J. Martin Passes Away

Veteran Mutual Leader Dies After Brief Illness

F. J. Martin

MUTUAL Insurance has lost one of its strongest advocates and most striking personalities in the death of F. J. Martin, of Seattle, which occurred in that western city on March 18th. He was sixty-four years old.

Mr. Martin was a pioneer of the mutual idea in the State of Washington and as President of the Northwestern Mutual Fire Association built up a business which for many years past has annually mounted to large figures.

He was an ardent believer in applying the principle of co-operation to mutual organizations and was one of the early founders and a recent president of the National Association of Mutual Fire Insurance Companies. At the time of his death he was president of the Federation Mutual Fire Insurance Companies.

His knowledge of insurance and prominence in this field made his service as a councilor widely sought, and he was one of the busiest men in all the mutual field. Always a notable figure at national mutual conventions he become known throughout the United States and his fame also brought him marked attention abroad.

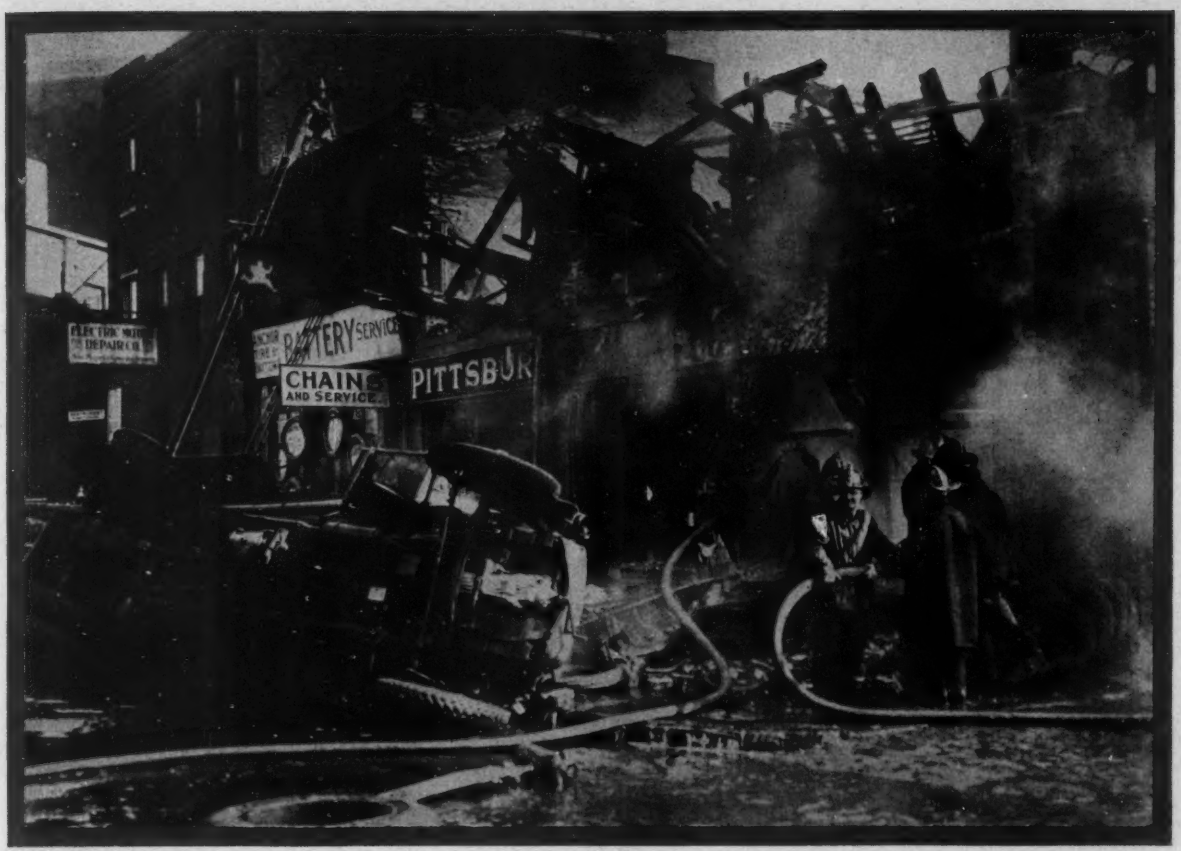


Photo by P. & A.

Accident to the Fire Fighting Equipment Itself Is an Added Hazard That Is Often not Taken Into Account by Those Who Plan Protection

Water For Extinguishing Fires

Comprehensive Study of Water Supply Sources and the Means of Storing and Distributing Water Against A Time of Need

By E. L. SANDERS

Vice-President and Treasurer Merchants and Farmers Mutual Fire Insurance Company of Worcester, Mass.

PART II
WATER SUPPLIES

WATER supplies commonly used are: 1. Waterworks, 2. Gravity tanks or reservoirs, 3. Pressure tanks, 4. Steam pumps, 5. Rotary pumps, 6. Centrifugal pumps.

In addition to the above, steamer connections are occasionally installed although they can seldom be considered as an additional supply.

For standard protection two independent water supplies are necessary so that if anything happens to one supply there will be another one to fall back upon. Another reason for the double supply is that it gives additional water in case of a large fire. The rules require that one of the supplies be automatic and that one be capable of furnishing water under heavy pressure. One or more of the supplies should be capable of giving a pressure of at least 25 pounds on the highest sprinklers.

Connections from street mains to sprinkler risers should be at least as large as the risers they supply. It is more liable to become clogged with sediment than is the riser and in the course of years this and corrosion may have considerable effect upon its capacity. For this reason it is desirable to use pipe of at least 6-inch diameter, although if the building is so small as to require not over a 4-inch riser and the distance to the street main is short, a 4-inch pipe may be satisfactory. In order to constitute a standard water supply, a water-works system should give at least 25 pounds pressure, at all times, on the highest line of sprinklers. The street main should be at least 6 inches in diameter and preferably fed from both directions. Water hammer is due to the sudden stopping of the flowage in a pipe and the larger the flow in proportion to the size of the pipe the worse is the effect of the hammer. Water hammer may affect a sprinkler system by operating alarm valves or dry valves and occasionally by actually breaking pipes or sprinkler heads. Modern sprinklers are seldom affected by water hammer, but it is not uncommon to have old types of heads set leaking from this cause. While street mains smaller than 6-inch diameter cannot be considered as affording a standard water supply, yet where the plant does not require a larger riser than 4 inches and where the main is fed both ways or where the distance to a larger main is short, such a supply may give very fair protection.

TANKS

GRAVITY TANKS — The capacity should never be less than 5000 gallons and preferably not less than 10,000 gallons. Where there is only one building to be supplied, a safe method for determining the proper size of tank, provided there is to be another supply of heavy pressure to back it up, is to figure the amount of water needed to supply one-quarter of the sprinklers on a floor for twenty minutes. This amounts to practically the same thing as taking 100 times the number of heads on a floor, assuming an average elevation of 25 feet for the water in the tank above the sprinklers. Thus, if there are 150 heads on a floor, a 15,000 gallon tank should be used. In hazardous risks where quick flash fires opening many heads are liable to occur, larger tanks are also desirable.

When the tank is to supply hydrants as well as sprinklers it should have a capacity of at least 40,000 gallons and an elevation of at least 100 feet above the ground. If the buildings are small and low these figures might be considerably modified but it cannot be considered good protection to use any tank for hydrant service unless it has a capacity of at least 30,000 gallons and an elevation above the highest building of at least 25 feet.

Under ordinary conditions, it will not be found advisable to use tanks for other purposes than to supply sprinklers. In some cases where the water is exceptionally pure, they are used for other purposes and if so used, they should be so piped that not more than the upper 5000 gallons can be used for purposes other than for supply to sprinklers.

PRESSURE TANKS — Pressure tanks are installed upon the principle that a moderate amount of water under heavy pressure is as efficient for sprinkler protection as a greater amount of water under lighter pressure. This is true for a small fire but not necessarily so for a fire of considerable size. Pressure tanks are necessarily limited to comparatively small sizes and should never be used except where there is another source of supply of larger volume available.

Pressure tanks should always be located on the roof or upper floor. If the tank is on the roof, the pressure required is 75 pounds. If it is below the roof an excess pressure is required equal to three times the pressure due to the height of the sprinklers above the tank. If the tank is located in the basement of a six-story building, the pressure required would be about 165 pounds, which is a very difficult air pressure to produce and maintain.

Pressure tanks should be enclosed in a heated room or roof house and should be used for sprinkler service only. They should be filled two-thirds full of water and one-third of air.

The common sizes of pressure tanks are as follows:—

4500 (3000 gallons of water).
6000 (4000 gallons of water).
7500 (5000 gallons of water).
9000 (6000 gallons of water).

Thus a 6000-gallon tank (4000 gallons of water) might be used where there were 80 sprinklers on a floor or where an 8000-gallon gravity tank would be called for.

Where capacities larger than 7500 gallons are needed it is usually better and more economical to use two smaller tanks instead of one large one. Thus in a building having 100 sprinklers on a floor, two 4500-gallon tanks (6000 gallons of water) might be used.

The Second Annual Underwriters' Conference

of the

Mutual Fire Insurance Companies

To Be Held at

HOTEL CLEVELAND

Cleveland, Ohio

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1929

PUMPS

STEAM PUMPS—A modern Underwriter steam pump is an excellent supply for a sprinkler system as well as for hydrants provided it is well located and maintained and has ample water supply. There should also be an ample supply of steam available at all times so that the pump can be started without delay.

Nearly all styles of fire pumps are built in three principal sizes, namely, 500, 750 and 1000 gallons per minute. The proper size of a pump for any given plant depends largely upon the other supply available. The combined capacity of both supplies should be enough to supply the number of hose streams thought to be desirable as well as the sprinklers that are liable to open. The 500-gallon size is too small for good protection except in plants of unusually small size, or when used to increase the pressure from low-service waterworks. The 750-gallon pump is suitable for some of the smaller plants but the 1000-gallon size is the one most generally used and the small additional cost over one of smaller capacity is usually justified. If a larger pumping capacity is desired it is good practice to install two pumps so that if one is out of commission at any time there will be something to fall back upon.

Rotary Pumps—Rotary pumps are not usually as good fire-fighting devices as steam pumps on account of the fact that they wear much more rapidly and cannot be as readily repaired when worn. In a plant that depends upon water power and has no adequate steam supply, a rotary pump may be found necessary as it is the only approved pump, except the centrifugal pump that can be readily connected to water power.

Centrifugal Pumps—These pumps are a comparatively new invention and are not yet in very general use. They are high-speed pumps and are particularly well adapted to locations where the source of power is electricity.

Electric Pumps—Either rotary, centrifugal, or plunger pumps may be fitted for electric drive. They are expensive to install and in most cases expensive to operate. The requirements for power supply and transmission are severe and in many locations these cannot be readily complied with. Electric pumps are usually not economical to install except in power houses or street railway property where electric power can be obtained at a low cost.

Steamer Connections—These are desirable for all equipments where there are steamers available that can pump into the system in case of fire, and especially where the other supplies are weak in pressure. Their use is, however, practically limited to the larger cities, as it is only here that steamers and efficient departments to man them are available at short notice.

The rules require the hose connection to be not less than 4 inches in diameter and as a matter of fact larger sizes are seldom used. It is

LEGISLATION

Bills Affecting Insurance Introduced In Various States

Colorado

House 60. Introduced by Dillon. Classifying incomes and profits for taxation and providing for collection of tax thereon. Referred to Committee on Judiciary.

House 398. A bill in relation to revenue, classifying incomes and profits for taxation. Referred to Committee on Finance.

House 400. Introduced by Bleecker. Providing for the levying, collection and payment of a tax or excise upon incomes of individuals, partnerships and corporations. Referred to Committee on Finance.

Senate 159. Introduced by Knauss. Relates to examination of insurance companies, providing that the Commissioner of Insurance may employ competent persons other than the actuary and examiners of his office to make examination. Any such examiner or appraiser may be an officer, agent or employee of any insurance company, except the one being examined, unless the company examined makes written objection thereto. This bill is the same as House 262.

Connecticut

Senate 401. Introduced by Durant. Levies 5% tax on gross receipts of all foreign corporations. Referred to Committee on Finance.

Maryland

House 141. Introduced by Cronin. Places an additional tax of 2% on the gross premiums of fire insurance companies, less return premiums, on all direct business received by such companies within the limits of this state. In the case of a mutual company dividends paid or credited to members in this state shall be construed to be return premiums. Money so received shall be set aside as a special fund for assisting in maintaining fire companies or departments in the State of Maryland and shall be paid out by the State Treasurer, to the treasurer of the City of Baltimore and to the respective treasurers of each county.

Every fire insurance company doing business in the state shall annually at the same time that its annual statement is required to be filed deliver to the insurance commissioner a full detailed statement of all business in the City of Baltimore and in the several counties during the year ending on the previous 31st day of December.

The bill provides that it shall be unlawful for any fire insurance company to increase the rate of insurance premium upon any property affected by this act because of this tax unless the insurance commissioner, after a hearing, shall be satisfied that an increase is necessary, and in such event the insurance commissioner shall authorize such reasonable increase as he shall deem fair and equitable. Referred to the Committee on Insurance and Loans.

House 170. Introduced by Ford. Amends the Mutual Law by adding a new section requiring every mutual insurance company to print upon the face of its policies the by-laws and rules of the company.

Michigan

House 359. Introduced by Wales. Insurance carriers transacting workmen's compensation business are required to file a bond of not less than the reserve for outstanding losses on compensation, such bond in no case to be less than $100,000. In lieu of filing a bond such carrier may deposit cash or approved securities with the state treasurer through the Insurance Commissioner, equal to such reserve. Referred to Committee on Insurance.

Nebraska

House 220. Introduced by Druesdow. Applies the Valued Policy Law to automobiles stolen or burned, the amount in the policy to be taken as the true value and measure of damages.

House 222. Introduced by Druesdow. A bill for an act to determine conclusively the amount of the liability of insurers of automobiles and trucks against loss by fire, theft or accident. Whenever an automobile or truck shall be entirely destroyed by fire, or rendered worthless by accident, or shall be stolen, the amount written in the policy shall be taken conclusively to be the true value of the automobile or truck insured and the true amount of loss and measure of damages.

House 581. Introduced by Johnson.

Exempts all mutuals except fire companies from gross premium tax. Under the present law the insurance department collects premium tax from fire companies on a purely retaliatory basis.

New Hampshire

House 115. Introduced by Callahan. Allows casualty companies to deduct from taxable business unabsorbed premium deposits actually returned or credited to policyholders upon business in this state. Referred to Committee on Insurance.

The present law allows mutual fire and mutual boiler insurance companies to deduct unabsorbed premium deposits actually returned or credited to policyholders. Passed House.

Passed House and Senate.

New York

House 744. Introduced by Cornaire. Amends section 54 of the workmen's compensation law relating to the limitation of the issuance of compensation policies by foreign insurance carriers. Requires the filing of a bond with the superintendent of insurance, conditioned upon the payment in full of all compensation and benefits provided for in its policies. Such bond shall be approved as to form by the attorney-general and as to sufficiency by the superintendent of insurance. The amount of the bond shall reasonably represent 25% of the outstanding reserves for compensation losses on policies issued by foreign carriers, but such bond shall be not less than $25,000 nor more than $1,000,000. Passed House.

Senate 525. Introduced by Gates. This bill is the same as House 744. Passed Senate.

Senate 1202. Introduced by Wales. Enlarges the powers of mutual employers' liability and workmen's compensation insurance corporations to permit such companies to write the bonds required under section 54 of the workmen's compensation law, which bonds will be required if House 744 or Senate 525 become law. Such companies are also permitted to execute surety bonds covering workmen's compensation obligations when such bonds are required in any state from companies authorized to transact such business under the laws of New York. Passed both Houses.

Spring Meetings at Old Point Comfort

The usual series of Spring Meetings of the National Association of Mutual Casualty Companies and the National Association of Automotive Mutual Insurance Companies will open at the Chamberlin-Vanderbilt Hotel, Old Point Comfort, Virginia, on Thursday morning, April 25th, 1929, and will continue through Saturday, April 27th.

Plans for the three day session include a number of committee meetings on Thursday morning and a golf tournament in the afternoon of that day. The first session of the National Association of Mutual Casualty Companies will convene on Thursday evening and under the chairmanship of President S. Bruce Black will listen to papers and discuss matters of paramount importance to mutual casualty executives.

On Friday, April 26th, the session of the Casualty Association will continue and in the evening the delegates of both associations with their wives will attend a formal dinner party at the Chamberlin-Vanderbilt. On Saturday, April 27th, the National Association of Automotive Mutual Insurance Companies under the Presidency and Chairmanship of Mr. Charles E. Hodges, Jr., will convene for a discussion of matters particularly affecting mutual automotive underwriters.

Mutual company managers living in or west of Chicago contemplating attendance upon these sessions will proceed to Old Point Comfort via the Baltimore and Ohio Railroad on the Capitol Limited. A special compartment Pullman car has been provided which will carry the delegates direct to Old Point Comfort by way of Washington City and Richmond, Virginia. It is expected that most of the delegates will leave Old Point Comfort by the Steamer Northland of the Norfolk and Washington Steamboat Company on Sunday evening, April 28th, going to Washington, D. C., for the Annual Meeting of the Chamber of Commerce of the United States which opens there on Monday, April 29th.

Water Supply

(*Continued from Page 26*)

Number of Standpipes—(a) The number of larger standpipes in each building, and in each section of a building divided by fire walls, should be such that all portions of each story of the building are within 30 feet of a large stream nozzle attached to not more than 100 feet of 2½-inch hose. Equipment should also provide for projecting nozzles into all important enclosures.

(b) The number of smaller standpipes in each building and each section of a building divided by fire walls should be such that all portions of each story of the building are within 20 feet of a nozzle for a first aid stream when attached to not more than 75 feet of small hose. Equipment should also provide for projecting nozzles into all important enclosures.

Location of Standpipes — (a) Where buildings are within 75 feet of exposing buildings, standpipes for large streams should be so located as to afford protection against exterior exposures as well as to the interior of the buildings.

(b) A standpipe for large streams should be located within fire resistive stairway enclosures where such are available, otherwise as near stairway as possible, or immediately outside an exterior wall, and within one foot of an exterior fire escape, fire tower or outside exit stairway.

Dry standpipes should never be concealed in building walls or built into pilasters.

(c) In buildings divided by numerous partitions standpipes should be so located that the streams can be brought to bear in any room.

(d) In buildings having large area, the smaller standpipes supplying the first aid streams should under ordinary conditions be located at the interior columns.

(e) Where standpipes are liable to be injured by heat from a fire they should be suitably insulated and protected.

Hose Stations.

(a) Hose stations shall be within easy reach of a person standing on the floor and in no case shall be over 6 feet from the floor. Hose stations shall be located conspicuously and where not likely to be obstructed.

(b) Where first aid streams are supplied from larger standpipes located in a stairway enclosure, the hose station and hose valve for the smaller hose should be located in the room outside the stair shaft and connected through the wall to the standpipe.

(c) Where a standpipe system is supplied by fire pump, one 2½ inch hose outlet for each 250 gallons pump capacity may be provided in the form of a wall outlet at the ground level from which the fire department may take water for use on exposing fires. Each outlet should be controlled by a separate valve and should be properly capped when not in use. Control valves should be accessible to the fire department only.

Hose.

(a) When required by the inspection department having jurisdiction each station at standpipes provided

for the use of those trained in handling large fire streams should be equipped with not more than 100 feet of approved 2½ inch fire hose attached and ready for use.

(b) Each hose outlet at standpipes provided for the use of occupants should be equipped with not more than 75 feet, and preferably not more than 50 feet of approved small fire hose attached and ready for use.

(c) Unlined linen hose is preferable, as it possesses far greater durability than any other type of fire hose when stored in dry heated atmospheres, but where subjected to severe deterioration due to the nature of the occupancy, rubber hose may be specified by the inspection department having jurisdiction.

Hose Racks.

(a) Each station at standpipes provided with 2½ inch hose should be equipped with an approved rack securely fastened in position. If in a closet, hose may be stored on a shelf with lattice bottom for ventilation.

(b) Each station provided with small hose should be equipped with an approved rack securely fastened in position. Semi-automatic racks are preferred.

(c) Each rack for 2½ inch hose should be provided with a conspicuous, permanent, metallic sign reading "For Fire Department Use Only—Dangerous." Each rack for small hose should be provided with a similar sign reading "Fire Hose for Use by Occupants of Building." Signs shall be securely fastened in position.

Water Supplies—The size of the water supply for standpipe systems is dependent on the size and number of fire streams likely to be required at any fire, and the length of time such streams will have to be operated. Both of these factors are largely influenced by the conditions at the building or plant to be equipped and necessitate that the probable number of standard streams for the protection of both interior and exterior of the building or plant be carefully ascertained before the water supply is decided upon.

Character of Water Supplies.

(a) Standpipe systems shall have an approved water supply preferably from two independent sources, one of which should be capable of furnishing water under heavy pressure.

(b) The value of water supplies should be considered in the following order:

1. from city waterworks systems where domestic pressure is adequate.
2. from automatic fire pumps.
3. from manually controlled fire pumps with pressure tanks.
4. from pressure tanks.
5. from gravity tanks.

(c) At least one of the water supplies shall be automatic and capable of supplying the streams first operated until the secondary sources can be brought into action.

(d) The secondary sources of water supply should be capable of furnishing the number of streams required for the full protection of the plant for long periods.

Minimum Supplies for Large Hose.

(a) Minimum supplies for standpipes for use by fire department or specially trained men (2½-inch hose

(*Continued on Page 29*)

Water Supply

(Continued from page 28)

and 1⅛-inch nozzle) shall be calculated upon the basis of not less than 250 gallons per minute for each standpipe riser. Capacity of supplies should be such that for a period of one hour there will be available a pressure of at least 50 pounds at topmost 2½-inch outlet (not including roof outlet) while water is being discharged through 50 feet of 2½-inch cotton rubber lined hose and a 1⅛-inch nozzle from the topmost outlet. When the supply is from fire pump or tank, the minimum sizes which should be recognized are: approved fire pump, 500 gallons per minute; pressure tank, 4,500 gallons; gravity tank, 5,000 gallons with bottom elevated 40 feet above highest hose outlet.

(b) At least one fire department connection should be provided for each standpipe riser where there is a public fire department equipped with pumpers.

Minimum Supplies for Small Hose

Minimum supplies for standpipes for use by occupants of buildings as first aid fire protection shall be calculated on the basis of 100 gallons per minute flowing with 25 pounds pressure at highest hose outlet. This will afford two good first aid streams simultaneously. Supply may be from adequate city waterworks system, fire pump, from supplies for large standpipe systems, pressure tanks and/or gravity tanks elevated 25 feet above highest hose outlet.

Standard Installations in Buildings Under Construction.

Buildings over 100 feet in height, while in the process of construction, offer a very serious problem to the fire department in fighting fires at the higher levels.

A standpipe system, either temporary or permanent in nature, should be installed before the building has reached the height approximately 70 feet (the exact limiting height to be determined by the longest aerial ladder in the local fire department) above the street grade and carried up with each floor.

First-Aid Fire Appliances.

STANDARD Fire Pails — (12 Quarts); Casks with Pails and Bucket Tanks. Approved fire pails made of galvanized iron or steel or of fibre; of 12 quart capacity; extinguishing agent used is water or an anti-freezing solution consisting of granulated calcium chloride (free from magnesium chloride) mixed with water in definite proportions depending upon the lowest temperature likely to be encountered.

Distribution.

(a) Unit of Installation:—Five (5) pails are considered as a unit.

(b) Area per Unit:—Units should be provided, where ordinary combustible materials are involved, in the proportion of one unit for every 2,500 square feet of floor area, figuring each room, gallery, basement, etc., separately. Units should be so placed that the distance to be traveled from any point to reach the nearest unit will not be greater than approximately 35 feet. Ordinarily pails should not be grouped in numbers larger than the specified unit.

Additional units should be provided where unusual quantities of ordinary combustible materials are involved. These additional units should be located as near as practicable to the hazard to be protected and in every instance they should be so placed that the distance to be traveled from any such hazard to reach the nearest unit will not be greater than 15 feet.

(c) Arrangement: — Pails, casks and bucket tanks should be conspicuously located where they will always be readily accessible and so distributed as to be immediately available in event of fire. Pails should be hung on hangers or set on brackets or shelves so that their upper rims will not be higher than 5 feet nor less than 2 feet from the floor.

School Fires

(Continued from page 20)

school on fire. The most satisfactory location for a school is at a distance from other buildings, so that it has open spaces on all sides. Not only does this eliminate the fire danger from other buildings, but it also provides better access in case of fire in the school itself.

But such a location is impossible in many cities. High land values, and crowded streets necessitate that the schools be built in close proximity to other buildings. In such cases, special protection should be provided. Wired-glass windows set in metal frames, and protected by metal shutters will do considerable to offset the fire danger. In New York City, it has been provided by ordinance that there must be at least a hundred feet between a garage and a schoolhouse.

Too many precautions cannot be taken to decrease the fire hazard. There are too many schools in this country where children learn the three R's at the risk of their lives. Even in many of the "modern" school buildings, teaching and learning should be listed among the highly hazardous occupations.

Lightning

(Continued from page 15)

Take for example, a cloud that is 1,000 feet high. A six-foot man on a plane directly under the storm center would be hit fifteen times out of every 1,000 strokes, while a twenty-five foot building would be hit every time. A man flat on the ground would be struck once for every hundred strokes. An 18.5 ft. building directly under the storm center would be struck eighty-four times out of a hundred. However, with the storm center moved only 296 feet, this building would not be struck.

This data is of the utmost importance in determining the best methods of protection, because it indicates what will happen when conditions are such that discharges will reach the house or rod. To determine the chance of any object being struck during the year, it is also necessary to know the likelihood of a cloud of sufficiently high potential passing over the object. It is apparent that this chance is usually quite small even when the object is located on a flat plane. When mountains, hills and trees are added, the chance becomes still smaller.

THE lightning rod is of real value in preventing or limiting damage when a building is struck. Whether or not it increases the chance of being struck depends upon circumstances. It is rather doubtful if it often does, as a chimney, grounded gutter or water pipe may be sufficiently conducting to determine the direction of the stroke.

In deciding upon a lightning rod, the economical factor on the cost of protection must be considered in connection with the probability of being struck. It seems that the best results can be obtained with plain inconspicuous rods. Ornate rods or rods with special points appear to have no advantage. A grounded metal roof would seem almost ideal protection. Rods should be installed so that side flashes are not likely to occur to conducting objects inside or outside the building.

When a building is in an exposed position and storms frequently pass over it, a more elaborate outlay for protection would be justified than in the case of an unexposed building.

For instance, a building on a cliff over a valley followed by storms would be in much greater danger from lightning than a building located in the valley. This would be especially true if connections were made from the upper building to the water level. Our knowledge of lightning now enables us to protect all ordinary structures. Some exceptional problems are not unsolved, but the solutions are not far off.

BITS OF WIT

Cookery with a Kick

Young Wife—"I'm afraid, dear, my pie is not all it should be. I think I must have left something out."

Husband (with a grimace, after sampling it)—"There's nothing you could leave out that would make it taste like that. It must be something you put in."—*Boston Transcript.*

Sad Reminder

Wife—"Every time you see a pretty girl, you forget you're married."

Hubby—"You're wrong, m'dear. Nothing brings home the fact more forcibly."—*Air Station News.*

Power of Suggestion

Tom—"Why are your socks on wrong side out, Bob?"

Bob—"My feet were hot and I turned the hose on them."—*Epworth Herald.*

Certain Detection

A Kansas man has discovered how to find a needle in a haystack. He sat on the stack.—*Life.*

Florida Climate

"Hello, Maggie! How are you getting on at school?"

"Fine. I'm getting the best position in the class."

"Splendid! Top, I suppose?"

"No; right at the foot, near the hot-water pipes."—*Tit-Bits.*

Brain-Work Stuff

Farmer—"Thought you said you had plowed the ten-acre field?"

Plowman—"No; I only said I was thinking about plowing it."

"Oh, I see, you've merely turned it over in your mind."—*Christian Evangelist.*

A Nice Distinction

Sam—"Do yuh refuse to pay me dat two dollahs I lent you?"

Rastus—"Oh, no, sah. Ah don't refuse, Ah just refrains."—*Boston Transcript.*

His Unlucky Port

A sailor was killed at Gulfport, when he came into contact with a live wife."—*Wilmington paper.*

A Destination, Anyway

There was a landlubber with the shipwrecked crew that had been adrift for two days, with hope at low ebb.

"What's that?" exclaimed the landsman, pointing into the distance. "That's land, isn't it?"

"I see nothing but the horizon," replied the first mate.

"Well, hang it, that's better than nothing. Let's pull for it."—*Capper's Weekly.*

Come to Think of It

Judge—"Well, John, I can give you this divorce, but it will cost you three dollars."

John—"Three dollars, boss?"

Judge—"That's the fee."

John—"Well, boss, I jes' tell ya, I don't believe I wants no divorce. There ain't three dollars difference 'tween dem two wimmen."—*Alabama Rammer Jammer.*

Abandon Him to Fate

"Does my practicing make you nervous?" asked the man who was learning to play a saxophone.

"It did when I first heard the neighbors discussing it," replied the man next door, "but I'm getting so now that I don't care what happens to you."—*Tit-Bits.*

Fame

A young business man, after eight years of absence, alighted at the station of the town of his birth. There was, despite his expectations, no one on the platform whom he knew.

Discouraged, he sought out the station master, a friend since boyhood. To him at least he would be welcome, and he was about to extend a hearty greeting when the other spoke.

"Hello, George," he said. "Goin' away?"—*Tit-Bits.*

One-Sided

Dusty—"Aren't rosy cheeks a sign of good health?"

Rusty—"I should say they are."

Dusty—"In that case, I saw a girl the other day who was a lot healthier on one side than on the other."—*Life.*

Under Two Flags

Store Manager—"They say brunettes have sweeter dispositions than blondes."

Clerk—"Well, my wife's been both and I can't see any difference."—*Progressive Grocer.*

An Opportunist

She—"And what did papa say when you told him you couldn't sleep for thinking of me?"

Jack—"He offered me a job as night watchman in his factory."—*Boston Transcript.*

In Hollywood Society

Visitor—"Sorry I couldn't get to your wedding."

Film Star—"Never mind, I'll have another one soon."—*Progressive Grocer.*

Tropical Taste

He—"Did you say I was no gentleman?"

She—"No; I merely remarked that you preferred brunettes."—*Boston Transcript.*

Sure Dope

Sweety—"What is the cure for seasickness?"

Salty—"Give it up."—*Our Navy.*

Only

Arthur, taking part in a geography examination, should be awarded a prize for his definition of horizon, which is as follows: "The horizon is where the sky and water meet—only they don't."—*Junior Friend.*

His Own Fault

"Sir, your daughter has promised to become my wife."

"Well, don't come near me for sympathy. I knew something like that would happen to you hanging around the house five nights a week."—*Brown Jug.*

True

Slim—"When do you do your hardest work?"

Fat—"Before breakfast always."

Slim—"What do you do?"

Fat—"Try to get outa bed."—*Boys' Life.*

Rah! Rah!

"How do you play hookey from the correspondence school?"

"I send them an empty envelope."—*Boston Transcript.*

A Line That Moves

"Customers push my goods for me," said the manufacturer.

"What line are you in, anyway?" asked the hardware jobber.

"Baby carriages," was the reply.—*Good Hardware.*

Pawing the Sheik

"The new patient in Ward B is very good-looking," said the nurse.

"Yes," agreed the matron, "but don't wash his face. He's had that done by four nurses this morning."—*Tit-Bit.*

His Liquid Accents

Jane—"There's one thing I don't like about Joe—his English is bad."

Joan—"Yes—and his Scotch is terrible."—*Life.*

We Define

A husband is a man who concentrates all his attention on one woman—A bachelor is one who never learned to concentrate.

A good many of the people who were graduated from the school of experience are still attending all the reunions.

Two insurance men were talking things over in the lobby of an Indian hotel. Says the first:

"Charley, haven't you been down south this winter?"

"Yeh," says Charley. Down Wheeling Virginia. Weren't you somewhere in that neighborhood?"

"Yeh, Macon, Georgia."

Madam—"Clarence, I am not accustomed to calling my chauffeur by his first name. What is your surname?"

Chauffeur—"Darling, ma'am."

Madam—"Drive on, Clarence."

World Series Stuff

She—"I heard some one yell 'fowl;' where are the feathers?"

He—"Oh, this game is between two picked teams."

Forced Run

Pitcher—"How come you are umpiring?"

Umpire—"Well, I'm planning to move away in a few weeks anyhow."—*Michigan Gargoyle.*

Only Sure Place

"Want to go to the ball game tomorrow?"

"No; I'd rather go to the matinée. I'm sure of a happy ending there."—*Pittsburg Post.*

Plug Him for This

"What would you do if a horse fell into your bathtub?"

"I'd pull the plug out."

One of Her Jobs

It's the woman who pays and pays, and that in all probability is because she's the only one home when the instalment collector arrives.—*Judge.*

Taxation

(Continued from page 10)

the hands of some official whose major duties lie in some other field than insurance. Probably everyone who knows anything about the matter readily would admit that insurance should bear the cost of state supervision. The insurance companies themselves could offer no objection to this nor could the outside interests who are experts in taxation. The great objection to the present system of state taxation seems to be that there is collected annually from the insurance companies in the various states many times the amount of money that is used to defray the expenses of supervision and regulation. An investigation made in a recent year disclosed the surprising fact that there was collected annually by the state governments in the form of taxes on insurance about twenty-five times as much money, on the average, as the states actually expended during the year upon their insurance departments. It was found, viewing the matter from a slightly different angle, that out of every dollar collected in the form of special taxes, less than four cents was expended by the state governments in the regulation and supervision of insurance. The rest was expended for general state purposes with which the insurance interests were no more concerned than were the other citizens of the state.

The statements that we have just made refer to the United States as a whole, and are average figures rather than those of any particular state. It may be of interest, however, to some of our readers to refer to the situation in some particular state, so we will instance Illinois. An attorney in an argument, before the Senate Committee of the State of Illinois, made a few years ago when an investigation was being made concerning fire and casualty insurance, is reported to have said: "In Illinois we collect approximately $3,500,000 a year from the insurance business in taxes, licenses, and fees. While we were collecting this $3,500,000 we appropriated for the State Insurance Department the sum of $108,000. What became of the difference of $3,392,000, imposed upon and collected from the insurance business? Was it used in the supervision of this business, for the benefit of the insuring public? We know it was not. We know that it was transferred into the general treasury fund and used for every other purpose under the shining sun except the supervision of insurance."

BUT, the whole story is not yet told. It is claimed by those who ought to know, that since 1915 or thereabouts, there has been a tendency for the state governments to expend a smaller percentage of their special tax levies on insurance in support of their various insurance departments. Ten years or so ago a much larger percentage of each dollar collected from insurance was expended on insurance regulation and supervision than is now so expended.

In the United States most insurance taxes presumably are levied primarily against the insurance companies themselves. Some legislators in looking around for possible sources of revenue view the insurance companies, it would appear, as a relatively rich type of corporation and, therefore, a proper subject for heavy taxes. We would not wish to infer in the slightest degree that the legislators in the various states ever have undertaken to discriminate against insurance in their taxation schemes. Far from it. It would seem that in conformity with the principle that natural persons or corporations should be taxed in accordance with their ability to pay, the insurance companies to them seem to have greater ability than some other forms of corporate enterprise. But, if these legislators think that the real incidence of taxation lies with the insurance companies, they are greatly in error. The real tax in most cases falls upon the policyholders, not upon the companies. The tax is a cost of doing business by the companies and, in the long run, is reflected in an increase in the rates charged to policyholders. The popular belief is that the insurance companies themselves bear the greater part of the burden of state taxation. The fact is, however, as already pointed out, that most of the burden falls upon the policyholders.

We already have shown in an earlier article in this Journal that insurance premiums are in the nature of trust funds held by the companies for those who pay the premiums. The reserves of insurance companies, especially certain types of insurance companies, are primarily funds for the purpose of paying future claims that will be made by certain policyholders. Any tax that touches the insurance reserves in any way is extremely unjust. A wider public knowledge of insurance would correct many of the state insurance taxation evils.

At an annual meeting of the United States Chamber of Commerce some three or four years ago, some recommendations of the Insurance Advisory Committee were taken under consideration. The outcome of the whole matter was the unanimous adoption, so it has been reported, of the following resolution: "Special State taxes now levied on policyholders through insurance companies should not be considered as a source of general revenue but should be reduced to the total in each State which will adequately support such State's departmental supervision, and a uniform principle of taxing the holders of insurance should be adopted throughout the States."

THERE is unmistakable evidence of a growing tendency in some few of the states of the United States to make special taxes on insurance a source of general revenue. How long such a tendency will last is a question which no one can answer. It seems highly probable that as the public becomes better educated with respect to the fundamental principles of insurance and of taxation as well, that many of the special state taxes on insurance will come in for a great deal of adverse criticism and that, eventually, they must either be abolished or reduced. All who are well-informed in the matter are pretty well in agreement that the taxation of insurance in the United States in recent years, in fact for a very long time, has been in an extremely chaotic and unsatisfactory condition.

(To be Continued)

Auto Registrations, Deaths and Injuries in Massachusetts During 1928

SEVERAL figures needed to complete Professor Kulp's article on Compulsory Automobile Insurance were omitted in the March number. The entire table is therefore printed here for those who wish to file these interesting statistics.

		Deaths		Injuries	
	Registrations	Total	Automobiles Per Death	Total	Automobiles Per Injury
1925	774,761	755	1,026	25,736	30
1926	838,111	705	1,185	25,351	33
1927	828,795	693	1,195	31,721	26

The Threshold of Saving

Mutual Insurance

Mutual Insurance involves more than a return of that portion of premiums which is not required for the payment of losses, operating expenses, and for the accumulation of reserves. - - - - -

It involves an obligation on the part of policyholders to be mutually careful in avoiding losses. - - - - - - - - - -

This principle is unique with Mutual Insurance. It is the reason why Mutual Insurance is safer — why it is more economical. - -

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31 St. James Avenue
Chicago, Ill.
175 West Jackson Blvd.
Dallas, Texas
1509 Main Street
Indianapolis, Ind.
128 East Washington St.
Los Angeles, Calif.
541 South Spring Street
Milwaukee, Wis.
425 East Water Street
Minneapolis, Minn.
Nicollet Ave. at 24th St.
Newark, N. J.
20 Washington Place
Portland, Oregon
95 5th Street
St. Paul, Minn.
337 Robert Street
San Francisco, Calif.
433 California Street

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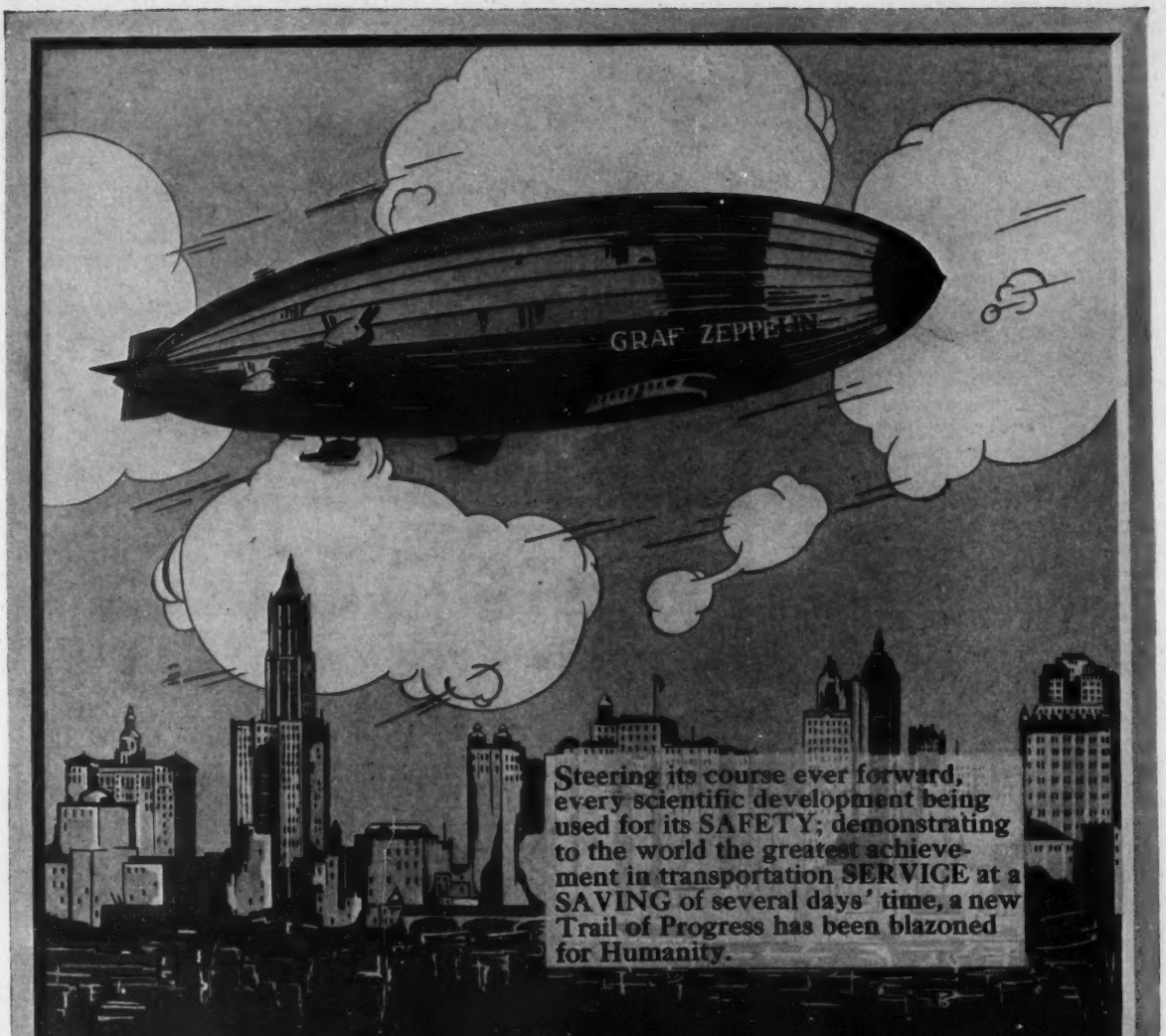

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Combined Statement of Companies

Comprising the "FEDERAL" Group

December 31, 1928

Combined Assets - - -	$11,350,590.51
Combined Liabilities-	6,853,640.05
Combined Surplus - -	4,496,950.46

Dividends Paid to Policy Holders Since Organization

$26,996,508.51

Federal Hardware & Implement Mutuals

Retail Hardware Mutual Fire Ins. Co.
of Minneapolis, Minnesota

Hardware Dealers Mutual Fire Ins. Co.
of Stevens Point, Wisconsin

Minnesota Implement Mutual Fire Ins. Co.
of Owatonna, Minnesota

53rd

Annual Statement of

THE CENTRAL

Manufacturers' Mutual Insurance Company

Van Wert, Ohio

JANUARY 1, 1929

ASSETS	
United States Government Bonds	*$1,970,100.00*
Municipal Bonds	*166,880.00*
Federal Land Bank and Other Bonds	*799,850.00*
First Mortgages on Real Estate	*399,950.00*
Interest Accrued	*36,149.53*
Real Estate	*48,000.00*
Premiums in Transmission	*308,240.93*
Cash in Banks and Office	*133,574.24*
Total Assets	*$3,862,744.70*
LIABILITIES	
Reserve for Losses (Unadjusted)	*138,437.20*
Reserve for Taxes and Expenses	*36,110.92*
Reserve for Unearned Premiums	*1,750,074.90*
Reserve for Contingencies	*150,000.00*
Total Liabilities	*$2,074,623.02*
NET SURPLUS	*1,788,121.68*
Total Reserves and Surplus	*$3,862,744.70*

"An old line, legal reserve, dividend paying, Mutual Fire Company"